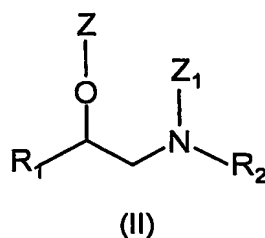


## CLAIMS

1. A compound of general formula A-(Y-ONO<sub>2</sub>)<sub>s</sub> (I) and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof, wherein

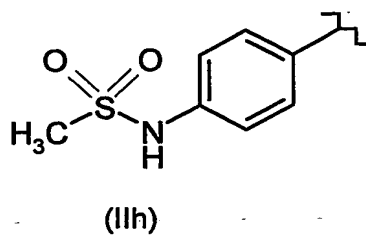
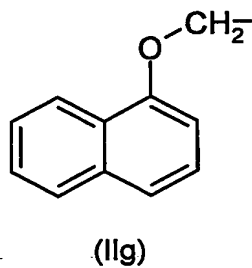
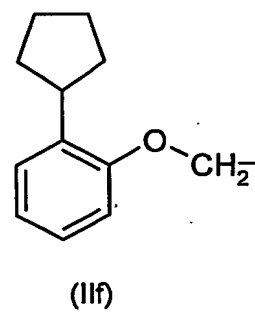
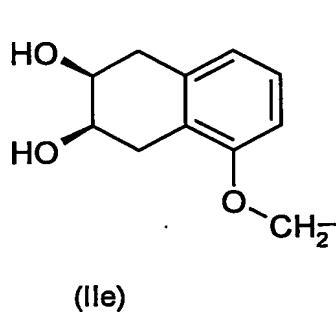
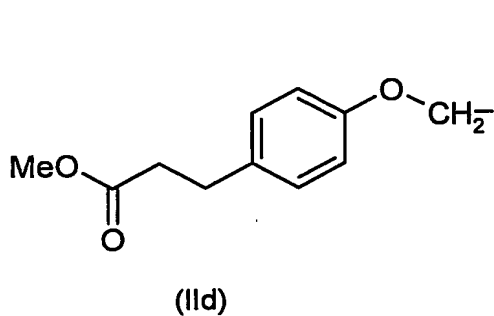
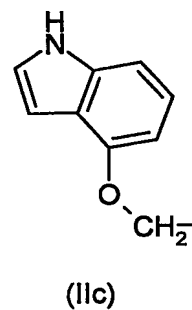
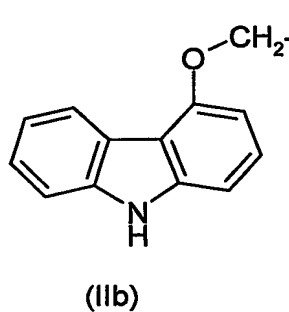
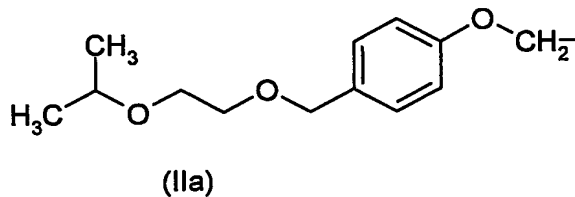
5 s is an integer equal to 1 or 2;

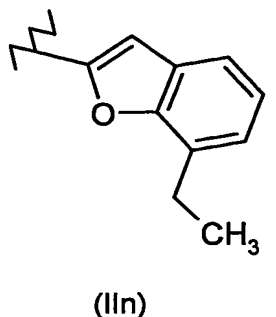
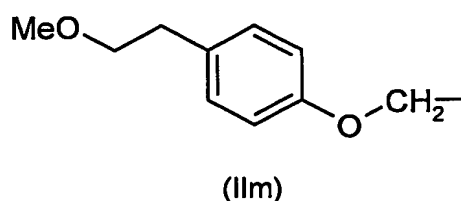
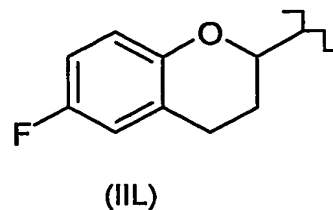
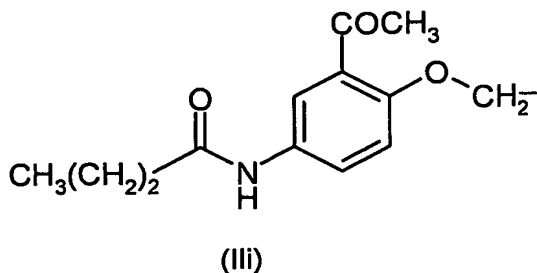
A is selected from the following  $\beta$ -adrenergic blockers residues of formula (II):



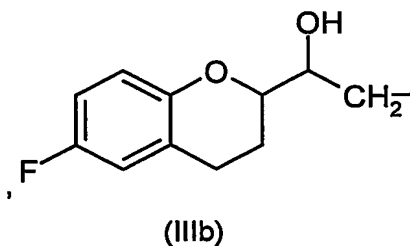
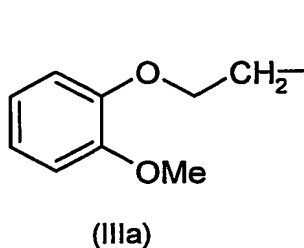
wherein

10  $R_1$  is selected from the group consisting of:





$R_2$  is selected from the group consisting of:  $-\text{CH}(\text{CH}_3)_2$ ,  $-\text{C}(\text{CH}_3)_3$  or



10

when the radical  $R_1$  has chosen from the formulae (IIa), (IIc), (IId), (IIg), (IIh), (III), (IIIm),  $R_2$  is  $-\text{CH}(\text{CH}_3)_2$ ;

when the radical  $R_1$  has chosen from the formulae (IIe), (IIf) or (IIIn),  $R_2$  is  $-\text{C}(\text{CH}_3)_3$ ;

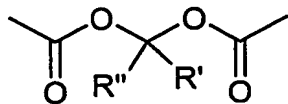
when  $R_1$  is the radical (IIb),  $R_2$  is (IIIa);

15

when  $R_1$  is the radical (IIl),  $R_2$  is (IIIb);

$Z$  is H or is a group capable of binding Y selected from the group consisting of:

$-\text{C}(\text{O})-$ ,  $-\text{C}(\text{O})\text{O}-$  or



wherein  $R'$  and  $R''$  are the same or different, and are H or straight or branched  $\text{C}_1$ - $\text{C}_4$  alkyl;

20

$Z_1$  is H or a  $-\text{C}(\text{O})-$  group capable of binding Y;

with the proviso that when  $s$  of formula (I) is 1,  $Z$  or  $Z_1$  is H;

Y is a bivalent radical having the following meaning:

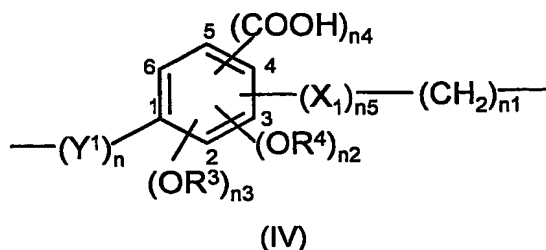
a)

- straight or branched C<sub>1</sub>-C<sub>20</sub> alkylene being optionally substituted with one or more of the substituents selected from the group consisting of: halogen atoms, hydroxy, -ONO<sub>2</sub> or T, wherein T is -OC(O)(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>, -O(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>;

5 b)

- cycloalkylene with 5 to 7 carbon atoms into cycloalkylene ring, the ring being optionally substituted with side chains T<sub>1</sub>, wherein T<sub>1</sub> is straight or branched alkyl with from 1 to 10 carbon atoms;

c)



wherein:

n is an integer from 0 to 20,

n<sub>1</sub> is an integer from 1 to 20;

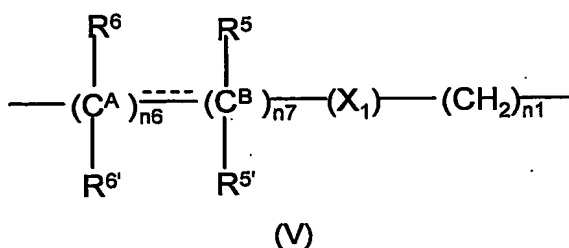
15 n<sub>2</sub>, n<sub>3</sub>, n<sub>4</sub> and n<sub>5</sub> are integers equal or different from each other, equal to 0 or 1,

R<sup>3</sup> and R<sup>4</sup> are independently selected from H or CH<sub>3</sub>,

Y<sup>1</sup> is -CH<sub>2</sub>- or -(CH<sub>2</sub>)<sub>na</sub>-CH=CH- wherein n<sub>a</sub> is an integer from 0 to 20;

X<sub>1</sub> is -WC(O)- or -C(O)W-, wherein W is oxygen, sulfur or NH;

d)



wherein:

n<sub>1</sub> n<sub>1</sub> is an integer from 1 to 20

X<sub>1</sub> is -WC(O)- or -C(O)W-, wherein W is oxygen, sulfur or NH;

25 n<sub>6</sub> is an integer from 1 to 20,

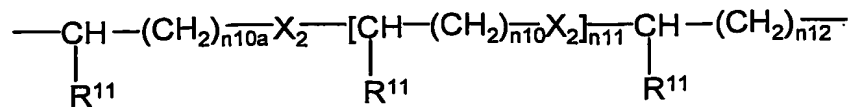
n<sub>7</sub> is an integer from 0 to 20,

R<sup>5</sup>, R<sup>5'</sup>, R<sup>6</sup> and R<sup>6'</sup> are independently selected from the group consisting of: H, CH<sub>3</sub>, OH, NH<sub>2</sub>, NHCOCH<sub>3</sub>, COOH, CH<sub>2</sub>SH and C(CH<sub>3</sub>)<sub>2</sub>SH;

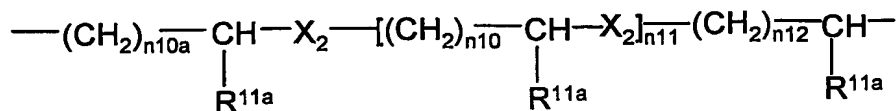
when the bond between the C<sup>A</sup> and C<sup>B</sup> carbons is a double bond R<sup>5</sup> and R<sup>6</sup> or R<sup>6'</sup> and R<sup>5'</sup> are absent;

when Y is selected from the bivalent radicals mentioned under c)-d), the -ONO<sub>2</sub> group is linked to the -(CH<sub>2</sub>)<sub>n1</sub>- group;

5 e)



(VI)



(VII)

10 wherein

X<sub>2</sub> is O or S,

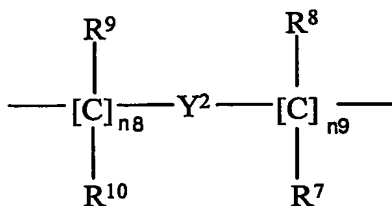
n10a, n10 and n12 are integer independently selected from 0 to 20,

n11 is an integer from 0 to 6;

R<sup>11</sup> is H, CH<sub>3</sub> or nitrooxy group;

15 R<sup>11a</sup> is CH<sub>3</sub> or nitrooxy group;

f)



(VIII)

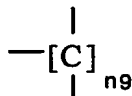
wherein:

20 n8 is an integer from 0 to 10;

n9 is an integer from 1 to 10;

R<sup>9</sup>, R<sup>10</sup>, R<sup>8</sup>, R<sup>7</sup> are the same or different, and are H or straight or branched C<sub>1</sub>-C<sub>4</sub> alkyl;

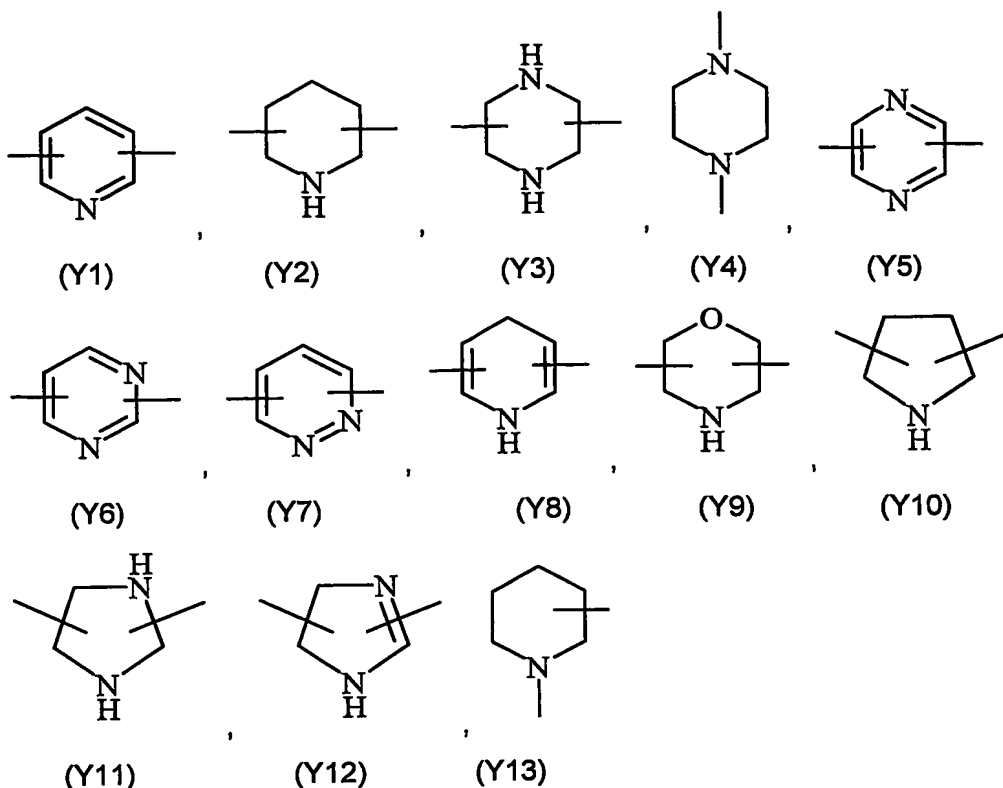
wherein the -ONO<sub>2</sub> group is linked to



25 wherein n9 is as defined above;

Y<sup>2</sup> is an heterocyclic saturated, unsaturated or aromatic 5 or 6 members ring, containing one or more heteroatoms selected from nitrogen, oxygen, sulfur,

and is selected from the group consisting of:



2. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 1 wherein s is 2 and Z and Z<sub>1</sub> are -C(O)-.

3. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 2 wherein

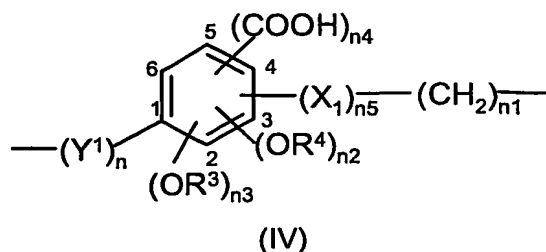
Y is a straight or branched C<sub>1</sub>-C<sub>20</sub> alkylene being optionally substituted with one or more of the substituents selected from the group consisting of: halogen atoms, hydroxy, -ONO<sub>2</sub> or T, wherein T is -OC(O)(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>, -O(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>.

4. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 3 wherein Y is a straight or branched C<sub>1</sub>-C<sub>10</sub> alkylene.

5. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 2 wherein

Y is

57



wherein

$n$  is an integer from 0 to 20,

5  $n_1$  is an integer from 1 to 20;

$n_2$ ,  $n_3$ ,  $n_4$  and  $n_5$  are integers equal or different from each other, equal to 0 or 1;

$R^3$  and  $R^4$  are independently selected from H or  $\text{CH}_3$ ;

$Y^1$  is  $-\text{CH}_2-$  or  $-(\text{CH}_2)_{n_a}-\text{CH}=\text{CH}-$  wherein  $n_a$  is an integer from 0 to 20;

$X_1$  is  $-\text{WC}(\text{O})-$  or  $-\text{C}(\text{O})\text{W}-$ , wherein W is oxygen, sulfur or NH.

10

6. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 5 wherein

$n_2$ ,  $n_3$ ,  $n_4$ ,  $n_5$  are equal to 0,

$n_1$  is 1,

15

$n$  is an integer from 0 to 10,

$Y^1$  is  $\text{CH}_2$ .

7. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 5 wherein

20

$n$ ,  $n_2$ ,  $n_5$  are 1,

$n_3$  and  $n_4$  are equal to 0, and

$n_1$  is an integer from 1 to 10,

$Y^1$  is  $-(\text{CH}_2)_{n_a}-\text{CH}=\text{CH}-$  wherein  $n_a$  is 0,

$X_1$  is  $-\text{WC}(\text{O})-$  wherein W is oxygen and  $X_1$  is bound to the phenyl ring through the

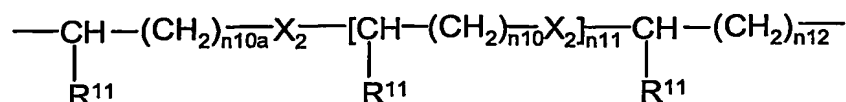
25

$[\text{C}]_4$ ,  $R^4$  is  $\text{CH}_3$  and the group  $(\text{OR}^4)$  is bound to the phenyl ring through the  $[\text{C}]_3$ .

8. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 2 wherein

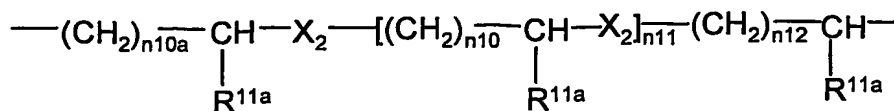
30

Y is



58

(VI)



(VII)

wherein

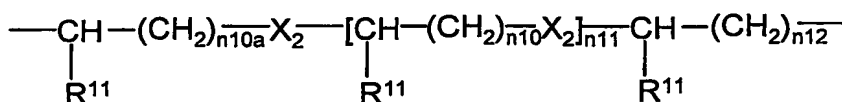
5

 $\text{X}_2$  is O or S, $n_{10a}$ ,  $n_{10}$  and  $n_{12}$  are integers independently selected from 0 to 20; $n_{11}$  is an integer from 0 to 6; $\text{R}^{11}$  is H,  $\text{CH}_3$  or a nitrooxy group; $\text{R}^{11a}$  is  $\text{CH}_3$  or a nitrooxy group.

10

9. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 8 wherein

Y is



15

(VI)

wherein

 $\text{X}_2$  is O or S, $n_{10a}$  is an integer from 0 to 10 $n_{11}$  are 0,

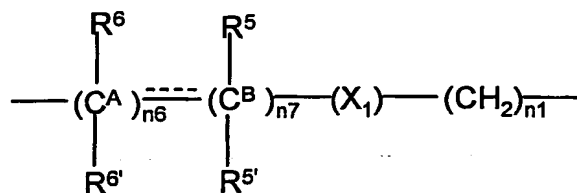
20

 $n_{12}$  is an integer from 1 to 10, $\text{R}^{11}$  is H or a nitrooxy group;wherein the  $\text{---ONO}_2$  group is bound to the  $\text{---}(\text{CH}_2)_{n_{12}}\text{---}$  group.

10. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 2 wherein

25

Y is



(V)

wherein:

$n_1$  is an integer from 1 to 20;

$X_1$  is  $-WC(O)-$  or a  $-C(O)W-$ , wherein W is oxygen, sulfur or NH.

$n_6$  is an integer from 1 to 20,

$n_7$  is an integer from 0 to 20,

- 5  $R^5$ ,  $R^{5'}$ ,  $R^6$  and  $R^{6'}$  are independently selected from the group consisting of: H,  $CH_3$ , OH,  $NH_2$ ,  $NHCOCH_3$ ,  $COOH$ ,  $CH_2SH$  and  $C(CH_3)_2SH$ ;  
when the bond between the  $C^A$  and  $C^B$  carbons is a double bond  $R^5$  and  $R^6$  or  $R^{6'}$  and  $R^{5'}$  are absent.

- 10 11. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 10 wherein

$n_1$  is an integer from 1 to 10,

$n_6$  and  $n_7$  are 1;

$X_1$  is  $-WC(O)-$  wherein W is sulfur;

- 15  $R^5$ ,  $R^{5'}$  and  $R^{6'}$  are H,

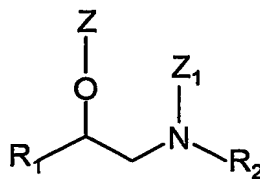
$R^6$  is  $NHCOCH_3$ ;

with the proviso that the  $-ONO_2$  group is bound to the  $-(CH_2)_{n_1}-$  group.

- 20 12. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 1 wherein

s is equal to 1

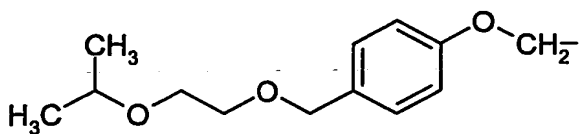
A is selected from the following  $\beta$ -adrenergic blockers residues of formula (II):



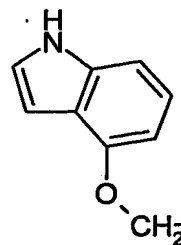
(II)

- 25 wherein

$R_1$  is selected from the group consisting of:

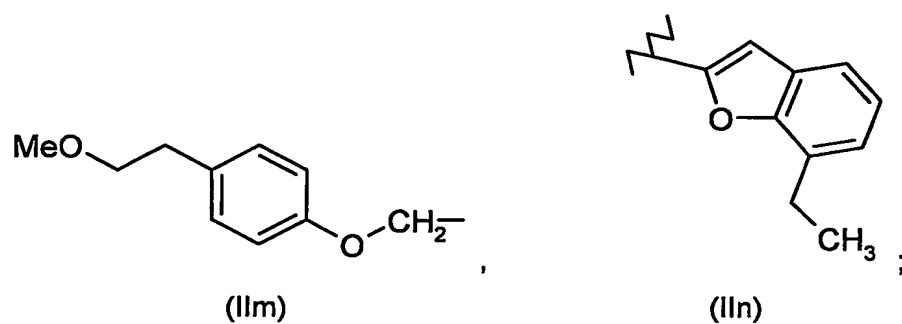
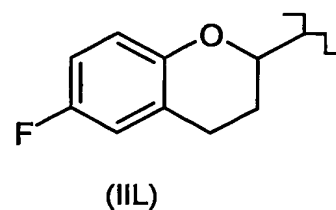
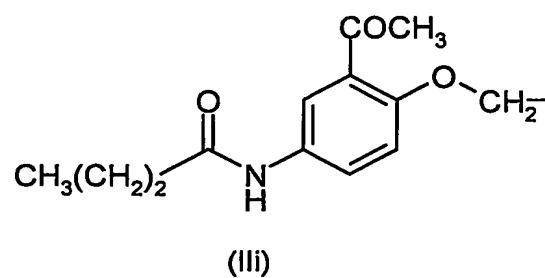
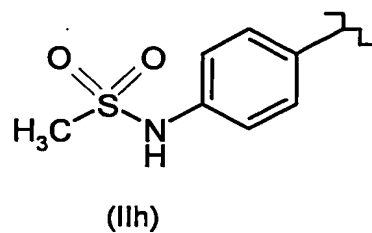
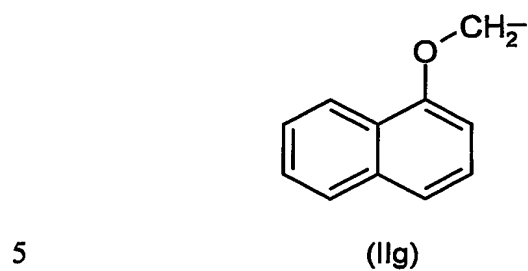
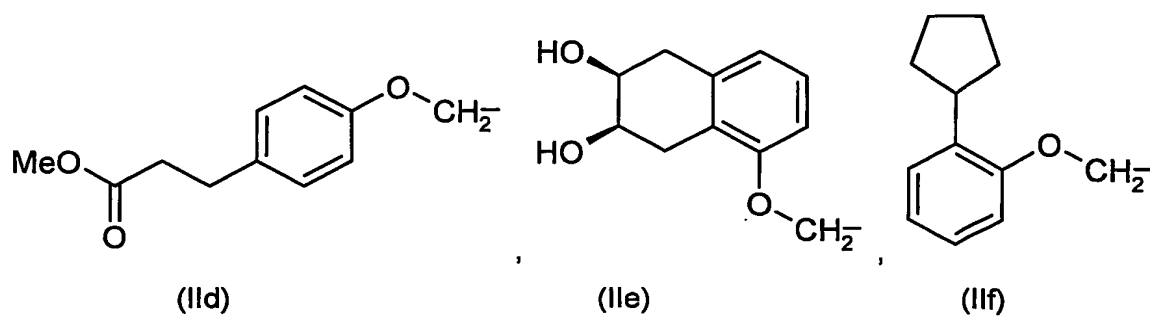


(IIa)

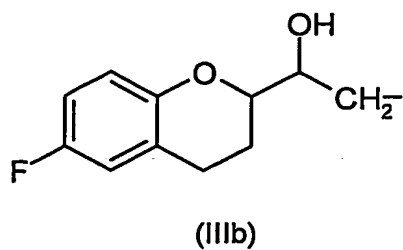


(IIc)





$\text{R}_2$  is selected from the group consisting of:  $-\text{CH}(\text{CH}_3)_2$ ,  $-\text{C}(\text{CH}_3)_3$  or



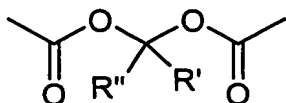
when the radical  $R_1$  has chosen from the formulae (IIa), (IIc), (IId), (IIg), (IIh), (IIi), (IIm),  $R_2$  is  $-\text{CH}(\text{CH}_3)_2$ ;

when the radical  $R_1$  has chosen from the formulae (IIe), (IIf) or (IIIn),  $R_2$  is  $-\text{C}(\text{CH}_3)_3$ ;

when  $R_1$  is the radical (IIL),  $R_2$  is (IIlb);

- 5 Z is a group capable of binding Y selected from the group consisting of:

$-\text{C}(\text{O})-$ ,  $-\text{C}(\text{O})\text{O}-$  or

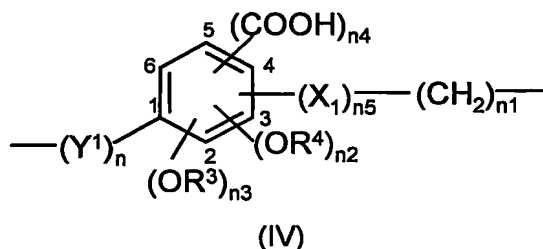


wherein  $R'$  and  $R''$  are the same or different, and are H or straight or branched  $\text{C}_1$ - $\text{C}_4$  alkyl;

$Z_1$  is H and

- 10 Y is a bivalent radical having the following meanings:

c)



wherein:

- 15 n is an integer from 0 to 20,

$n_1$  is an integer from 1 to 20;

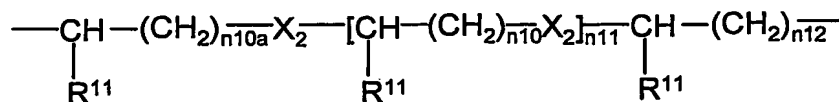
$n_2$ ,  $n_3$ ,  $n_4$  and  $n_5$  are integers equal or different from each other, equal to 0 or 1,

$R^3$  and  $R^4$  are independently selected from H or  $\text{CH}_3$ ,

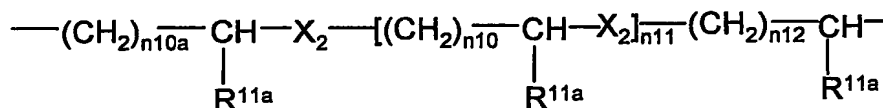
$Y^1$  is  $-\text{CH}_2-$  or  $-(\text{CH}_2)_{n_a}-\text{CH}=\text{CH}-$  wherein  $n_a$  is an integer from 0 to 20;

- 20  $X_1$  is  $-\text{WC}(\text{O})-$  or  $-\text{C}(\text{O})\text{W}-$ , wherein W is oxygen, sulfur or NH;

e)



(VI)



(VII)

25

wherein

$X_2$  is O or S,

n10a is 0 or 1,

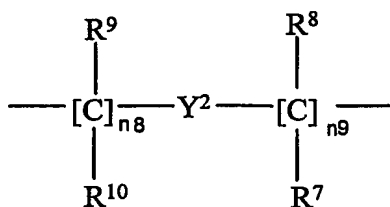
n11 is 0 or 1,

n10 and n12 is 1 or 2,

R<sup>11</sup> is H, CH<sub>3</sub> or nitrooxy group;

5 R<sup>11a</sup> is CH<sub>3</sub> or nitrooxy group;

f)



(VIII)

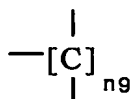
wherein:

10 n8 is an integer from 0 to 10;

n9 is an integer from 1 to 10;

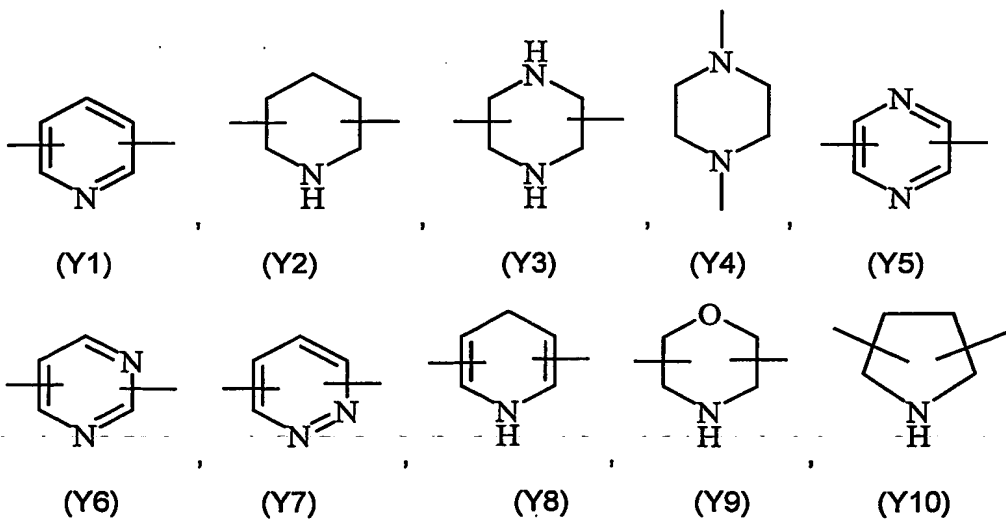
R<sup>9</sup>, R<sup>10</sup>, R<sup>8</sup>, R<sup>7</sup> are the same or different, and are H or straight or branched C<sub>1</sub>-C<sub>4</sub> alkyl;

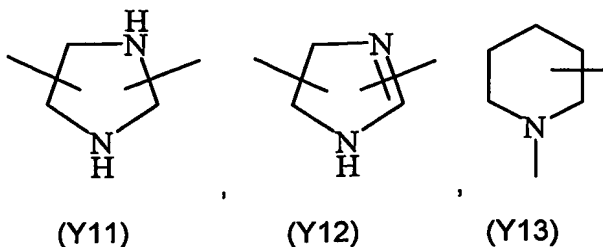
wherein the -ONO<sub>2</sub> group is linked to



15 wherein n9 is as defined above;

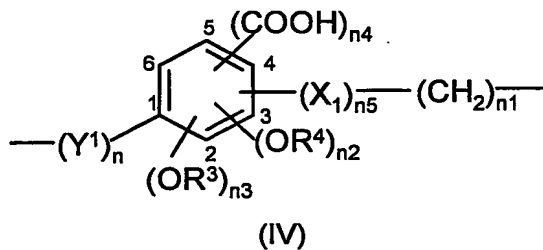
Y<sup>2</sup> is an heterocyclic saturated, unsaturated or aromatic 5 or 6 members ring, containing one or more heteroatoms selected from nitrogen, oxygen, sulfur, and is selected from the group consisting of:





13. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 12 wherein Z is  $-\text{C}(\text{O})-$ .

14. A compound and enantiomers and diastereoisomers and pharmaceutically acceptable salts thereof according to claims 12 and 13 wherein Y is



wherein

n is an integer from 0 to 20, and n1 is an integer from 1 to 20;

n2, n3, n4 and n5 are integers equal or different from one another, equal to 0 or 1;

15  $\text{R}^3$  and  $\text{R}^4$  are independently selected from H or  $\text{CH}_3$ ;

$\text{Y}^1$  is  $-\text{CH}_2-$  or  $-(\text{CH}_2)_{n_a}-\text{CH}=\text{CH}-$  wherein  $n_a$  is an integer from 0 to 20;

$\text{X}_1$  is  $-\text{WC}(\text{O})-$  or  $-\text{C}(\text{O})\text{W}-$ , wherein W is oxygen, sulfur or NH.

15. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 14 wherein

n2, n3, n4, n5 are equal to 0,

n1 is 1,

n is an integer from 0 to 10,

$\text{Y}^1$  is  $\text{CH}_2$ .

25

16. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 14 wherein

n, n2, n5 are 1,

n3 and n4 are equal to 0,

$n_1$  is an integer from 1 to 10,

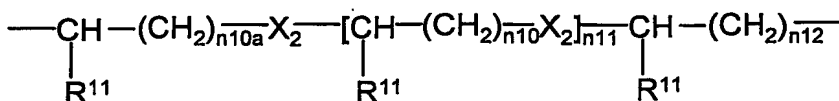
$Y^1$  is  $-(CH_2)_{n_a}-CH=CH-$  wherein  $n_a$  is 0,

$X_1$  is  $-WC(O)-$  wherein  $W$  is oxygen and  $X_1$  is bound to the phenyl ring through the  $[C]_4$ ,

5  $R^4$  is  $CH_3$  and the  $(OR^4)$  group is bound to the phenyl ring through the  $[C]_3$ .

17. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claims 12 and 13 wherein

$Y$  is



10

(VI)

wherein

$X_2$  is O or S,

$n_{10a}$  and  $n_{11}$  are 0,

15

$n_{12}$  is 1,

$R^{11}$  is H;

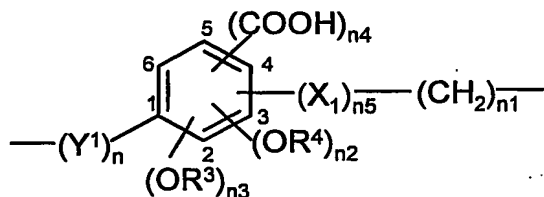
wherein the  $-ONO_2$  group is bound to the  $-(CH_2)_{n_{12}}-$  group.

18. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 12 wherein  $Z$  is  $-C(O)O-$ .

20

19. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claims 12 and 18 wherein

$Y$  is



25

(IV)

wherein

$n$  is an integer from 0 to 20, and  $n_1$  is an integer from 1 to 20;

$n_2$ ,  $n_3$ ,  $n_4$  and  $n_5$  are integers equal or different from one another, equal to 0 or 1;

30

$R^3$  and  $R^4$  are independently selected from H or  $CH_3$ ;

$Y^1$  is  $-CH_2-$  or  $-(CH_2)_{n_a}-CH=CH-$  wherein  $n_a$  is an integer from 0 to 20;

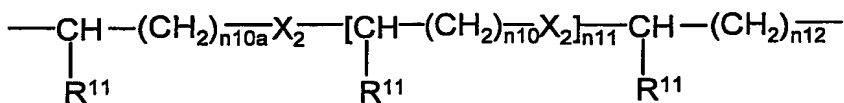
$X_1$  is  $-WC(O)-$  or  $-C(O)W-$ , wherein W is oxygen, sulfur or NH.

20. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 19 wherein

- 5  $n_2, n_3, n_4, n_5$  are equal to 0,  
 $n_1$  is 1,  
 $n$  is an integer from 0 to 10,  
 $Y^1$  is  $CH_2$ .

10 21. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claims 12 and 18 wherein

Y is



(VI)

15 wherein

$X_2$  is O or S,

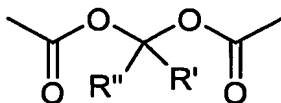
$n_{10a}$  and  $n_{11}$  are 0,

$n_{12}$  is 1,

$R^{11}$  is H;

20 wherein the  $-ONO_2$  group is bound to the  $-(CH_2)_{n_{12}}-$  group.

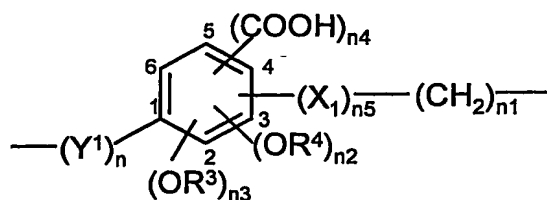
22. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claims 12 wherein Z is



25

23. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claims 12 and 22 wherein

Y is



(IV)

wherein

n is an integer from 0 to 20,

n1 is an integer from 1 to 20;

5 n2, n3, n4 and n5 are equal to 0;

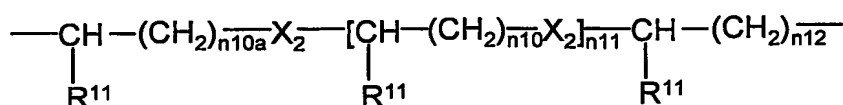
Y<sup>1</sup> is -CH<sub>2</sub>-;

24. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 23 wherein n is 0 and n1 is 1.

10

25. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claims 12 and 22 wherein

Y is



15

(VI)

wherein

X<sub>2</sub> is O or S,n<sub>10a</sub> and n<sub>11</sub> are 0,n<sub>12</sub> is 1,20 R<sup>11</sup> is H;wherein the -ONO<sub>2</sub> group is bound to the-(CH<sub>2</sub>)<sub>n<sub>12</sub></sub>- group.

26. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 1 wherein s is 1, Z is H and Z<sub>1</sub> are -C(O)-.

25

27. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 26 wherein

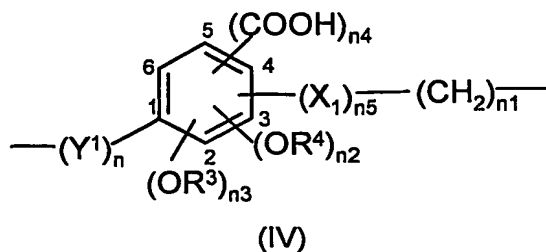
Y is a straight or branched C<sub>1</sub>-C<sub>20</sub> alkylene being optionally substituted with one or more of the substituents selected from the group consisting of halogen atoms, hydroxy, -ONO<sub>2</sub> or T, wherein T is -OC(O)(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>, -O(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>.

30

28. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 27 wherein Y is a straight or branched C<sub>1</sub>-C<sub>10</sub> alkylene.

29. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 26 wherein

Y is



wherein

n is an integer from 0 to 20,

n1 is an integer from 1 to 20;

n2, n3, n4 and n5 are integers equal or different from each other, equal to 0 or 1;

R<sup>3</sup> and R<sup>4</sup> are independently selected from H or CH<sub>3</sub>;

Y<sup>1</sup> is -CH<sub>2</sub>- or -(CH<sub>2</sub>)<sub>na</sub>-CH=CH- wherein na is an integer from 0 to 20;

X<sub>1</sub> is -WC(O)- or -C(O)W-, wherein W is oxygen, sulfur or NH.

30. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 29 wherein

n2, n3, n4, n5 are equal to 0,

n1 is 1,

n is an integer from 0 to 10,

Y<sup>1</sup> is CH<sub>2</sub>.

31. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 29 wherein

n, n2, n5 are 1,

n3 and n4 are equal to 0,

n1 is an integer from 1 to 10,

Y<sup>1</sup> is -(CH<sub>2</sub>)<sub>na</sub>-CH=CH- wherein na is 0,

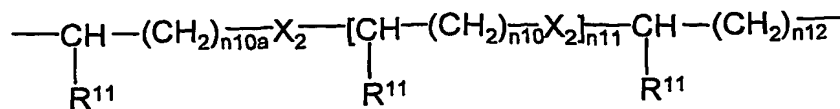
X<sub>1</sub> is -WC(O)- wherein W is oxygen and X<sub>1</sub> is bound to the phenyl ring through the [C]<sub>4</sub>,

R<sup>4</sup> is CH<sub>3</sub> and the group (OR<sup>4</sup>) is bound to the phenyl ring through the [C]<sub>3</sub>.

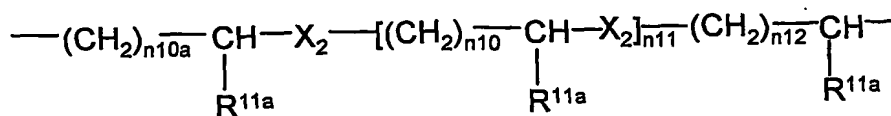
32. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 26 wherein



Y is



(VI)



(VII)

wherein

X<sub>2</sub> is O or S,

n<sub>10a</sub>, n<sub>10</sub> and n<sub>12</sub> are integers independently selected from 0 to 20;

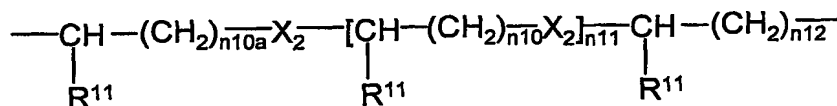
n<sub>11</sub> is an integer from 0 to 6;

R<sup>11</sup> is H, CH<sub>3</sub> or a nitrooxy group;

R<sup>11a</sup> is CH<sub>3</sub> or a nitrooxy group.

33. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 32 wherein

Y is



(VI)

wherein

X<sub>2</sub> is O or S,

n<sub>10a</sub> is 0 or 1,

n<sub>11</sub> is 0 or 1,

n<sub>10</sub> and n<sub>12</sub> are 1 or 2,

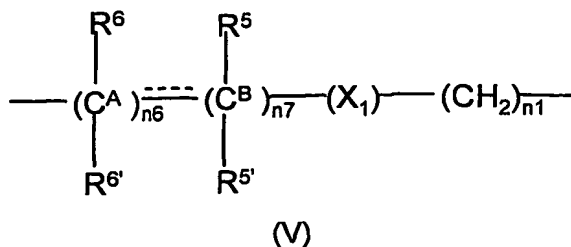
R<sup>11</sup> is H or nitrooxy;

wherein the -ONO<sub>2</sub> group is bound to the -(CH<sub>2</sub>)<sub>n<sub>12</sub></sub>- group.

34. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 26 wherein

Y is

69



wherein:

n1 is an integer from 1 to 20;

5  $\text{X}_1$  is  $\text{---WC(O)---}$  or a  $\text{---C(O)W---}$ , wherein W is oxygen, sulfur or NH.

n6 is an integer from 1 to 20,

n7 is an integer from 0 to 20,

$\text{R}^5$  and  $\text{R}^{5'}$   $\text{R}^6$  and  $\text{R}^{6'}$  are independently selected from the group consisting of: H,  $\text{CH}_3$ , OH,  $\text{NH}_2$ ,  $\text{NHCOCH}_3$ ,  $\text{COOH}$ ,  $\text{CH}_2\text{SH}$  and  $\text{C}(\text{CH}_3)_2\text{SH}$ ;

10 when the bond between the  $\text{C}^{\text{A}}$  and  $\text{C}^{\text{B}}$  carbons is a double bond  $\text{R}^5$  and  $\text{R}^6$  or  $\text{R}^{5'}$  and  $\text{R}^{6'}$  are absent.

35. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 34 wherein

15 n1 is an integer from 1 to 10,

n6 and n7 are 1;

$\text{X}_1$  is  $\text{---WC(O)---}$  wherein W is sulfur;

$\text{R}^5$ ,  $\text{R}^{5'}$  and  $\text{R}^{6'}$  are H,

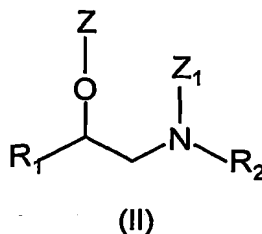
$\text{R}^6$  is  $\text{NHCOCH}_3$ ;

20 with the proviso that the  $\text{---ONO}_2$  group is bound to the  $\text{---(CH}_2)_{\text{n}1}\text{---}$ .

36. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 1 wherein

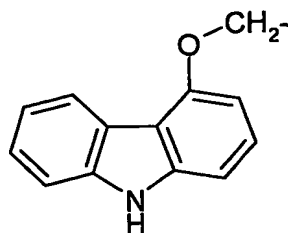
s is an integer equal to 1 or 2;

25 A is the  $\beta$ -adrenergic blocker residue of formula (II):



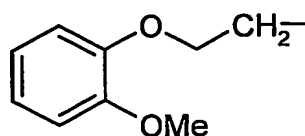
wherein

$\text{R}_1$  is



(IIb)

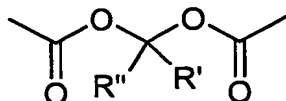
$R_2$  is



(IIIa)

Z is H or is a group capable of binding Y selected from the group consisting of:

$-C(O)-$ ,  $-C(O)O-$  or



- 10 wherein  $R'$  and  $R''$  are the same or different, and are H or straight or branched  $C_1$ - $C_4$  alkyl;  
 $Z_1$  is H or a  $-C(O)-$  group capable of binding Y;  
 with the proviso that when s of formula (I) is 1, Z or  $Z_1$  is H;  
 Y is a bivalent radical having the following meaning:

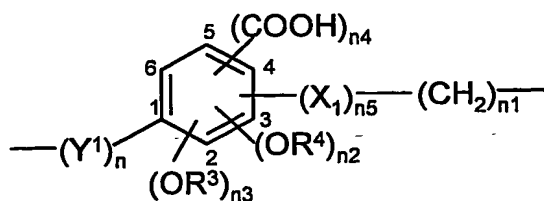
a)

- 15 - straight or branched  $C_1$ - $C_{20}$  alkylene being optionally substituted with one or more of the substituents selected from the group consisting of: halogen atoms, hydroxy,  $-ONO_2$  or T, wherein T is  $-OC(O)(C_1-C_{10}alkyl)-ONO_2$ ,  $-O(C_1-C_{10}alkyl)-ONO_2$ ;

b)

- 20 - cycloalkylene with 5 to 7 carbon atoms into cycloalkylene ring, the ring being optionally substituted with side chains  $T_1$ , wherein  $T_1$  is straight or branched alkyl with from 1 to 10 carbon atoms;

c)



(IV)

wherein:

n is an integer from 0 to 20,

n1 is an integer from 1 to 20;

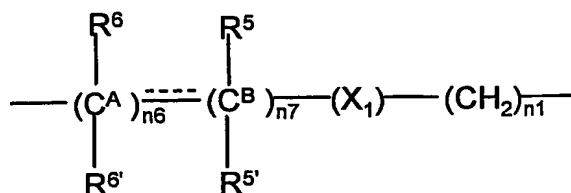
n2, n3, n4 and n5 are integers equal or different from each other, equal to 0 or 1,

5  $R^3$  and  $R^4$  are independently selected from H or  $CH_3$ ,

$Y^1$  is  $-CH_2-$  or  $-(CH_2)_{na}-CH=CH-$  wherein  $na$  is an integer from 0 to 20;

$X_1$  is  $-WC(O)-$  or  $-C(O)W-$ , wherein W is oxygen, sulfur or NH;

d)



(V)

wherein:

n1 n1 is an integer from 1 to 20

$X_1$  is  $-WC(O)-$  or  $-C(O)W-$ , wherein W is oxygen, sulfur or NH;

n6 is an integer from 1 to 20,

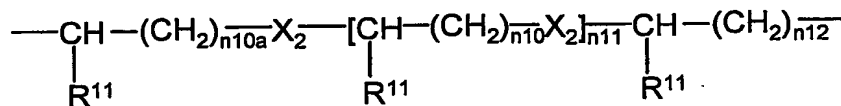
15 n7 is an integer from 0 to 20,

$R^5$ ,  $R^{5'}$ ,  $R^6$  and  $R^{6'}$  are independently selected from the group consisting of: H,  $CH_3$ , OH,  $NH_2$ ,  $NHCOCH_3$ ,  $COOH$ ,  $CH_2SH$  and  $C(CH_3)_2SH$ ;

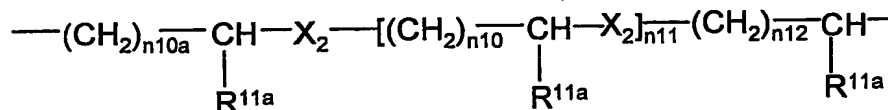
when the bond between the  $C^A$  and  $C^B$  carbons is a double bond  $R^5$  and  $R^6$  or  $R^{6'}$  and  $R^{5'}$  are absent;

20 when Y is selected from the bivalent radicals mentioned under c)-d), the  $-ONO_2$  group is linked to the  $-(CH_2)_{n1}-$  group;

e)



(VI)



(VII)

wherein

$X_2$  is O or S,

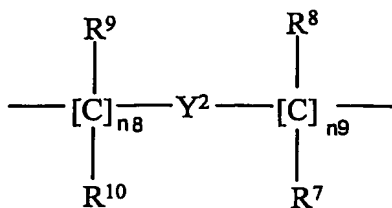
n10a, n10 and n12 are integer independently selected from 0 to 20,

n11 is an integer from 0 to 6;

R<sup>11</sup> is H, CH<sub>3</sub> or nitrooxy group;

R<sup>11a</sup> is CH<sub>3</sub> or nitrooxy group;

f)



5

(VIII)

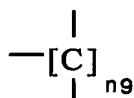
wherein:

n8 is an integer from 0 to 10;

n9 is an integer from 1 to 10;

10 R<sup>9</sup>, R<sup>10</sup>, R<sup>8</sup>, R<sup>7</sup> are the same or different, and are H or straight or branched C<sub>1</sub>-C<sub>4</sub> alkyl;

wherein the -ONO<sub>2</sub> group is linked to

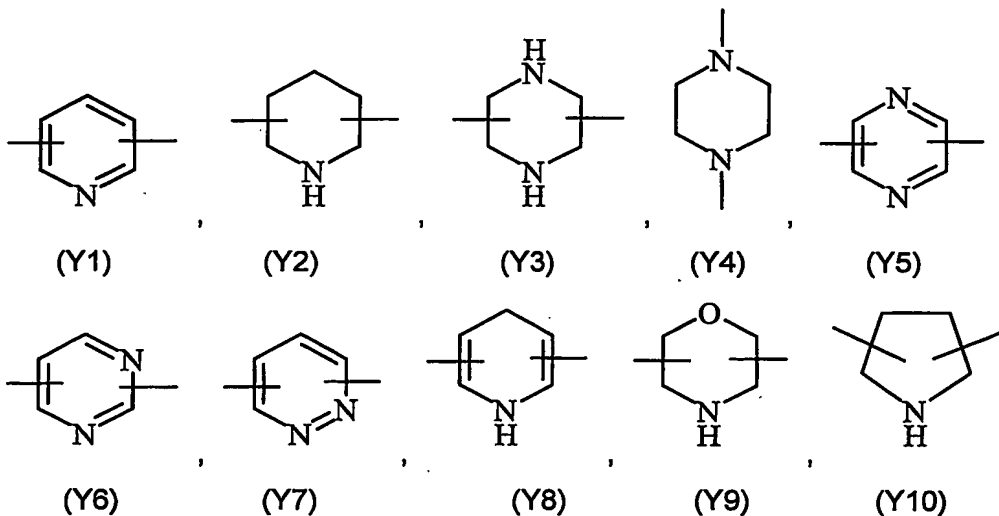


wherein n9 is as defined above;

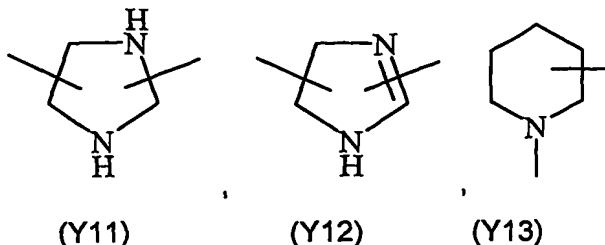
Y<sup>2</sup> is an heterocyclic saturated, unsaturated or aromatic 5 or 6 members ring, containing

15 one or more heteroatoms selected from nitrogen, oxygen, sulfur,

and is selected from the group consisting of:



20



37. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 36 wherein s is 2 and Z and Z<sub>1</sub> are -C(O)-.

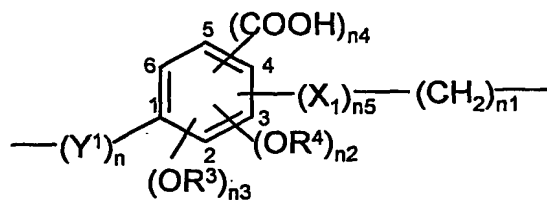
38. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 37 wherein

Y is a straight or branched C<sub>1</sub>-C<sub>20</sub> alkylene being optionally substituted with one or more of the substituents selected from the group consisting of: halogen atoms, hydroxy, -ONO<sub>2</sub> or T, wherein T is -OC(O)(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>, -O(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>.

39. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 38 wherein Y is a straight or branched C<sub>3</sub>-C<sub>6</sub> alkylene.

40. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 37 wherein

Y is



(IV)

wherein

n is an integer from 0 to 20,

n<sub>1</sub> is an integer from 1 to 20;

n<sub>2</sub>, n<sub>3</sub>, n<sub>4</sub> and n<sub>5</sub> are integers equal or different from each other, equal to 0 or 1;

R<sup>3</sup> and R<sup>4</sup> are independently selected from H or CH<sub>3</sub>;

Y<sup>1</sup> is -CH<sub>2</sub>- or -(CH<sub>2</sub>)<sub>na</sub>-CH=CH- wherein na is an integer from 0 to 20;

X<sub>1</sub> is -WC(O)- or -C(O)W-, wherein W is oxygen, sulfur or NH.

41. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 40 wherein

n2, n3, n4, n5 are equal to 0,

n1 is 1,

5 n is an integer from 0 to 10,

Y<sup>1</sup> is CH<sub>2</sub>.

42. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 40 wherein

10 n, n2, n5 are 1,

n3 and n4 are equal to 0, and

n1 is an integer from 1 to 10,

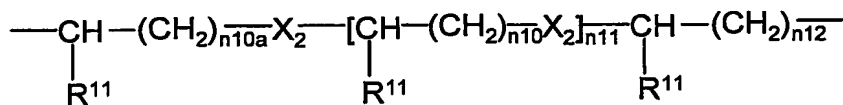
Y<sup>1</sup> is -(CH<sub>2</sub>)<sub>na</sub>-CH=CH- wherein na is 0,

15 X<sub>1</sub> is -WC(O)- wherein W is oxygen and X<sub>1</sub> is bound to the phenyl ring through the [C]<sub>4</sub>,

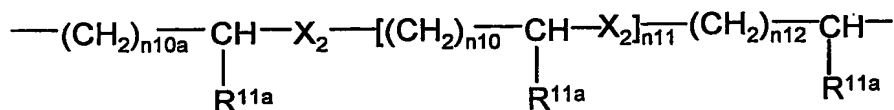
R<sup>4</sup> is CH<sub>3</sub> and the group (OR<sup>4</sup>) is bound to the phenyl ring through the [C]<sub>3</sub>.

43. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 37 wherein

20 Y is



(VI)



(VII)

25 wherein

X<sub>2</sub> is O or S,

n10a, n10 and n12 are integers independently selected from 0 to 20;

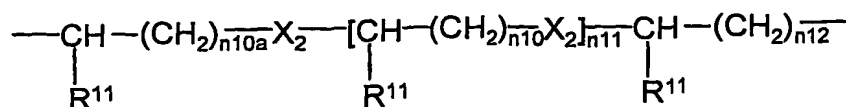
n11 is an integer from 0 to 6;

R<sup>11</sup> is H, CH<sub>3</sub> or a nitrooxy group;

30 R<sup>11a</sup> is CH<sub>3</sub> or a nitrooxy group.

44. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 43 wherein

Y is



5

(VI)

wherein

X<sub>2</sub> is O or S,

n<sub>10a</sub> is an integer from 0 to 10

n<sub>11</sub> are 0,

10

n<sub>12</sub> is an integer from 1 to 10,

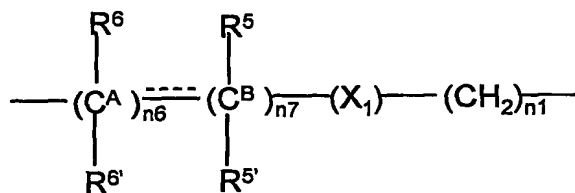
R<sup>11</sup> is H or a nitrooxy group;

wherein the -ONO<sub>2</sub> group is bound to the -(CH<sub>2</sub>)<sub>n12</sub>- group.

45. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 37 wherein

15

Y is



(V)

wherein:

20

n<sub>1</sub> is an integer from 1 to 20;

X<sub>1</sub> is -WC(O)- or a -C(O)W-, wherein W is oxygen, sulfur or NH.

n<sub>6</sub> is an integer from 1 to 20,

n<sub>7</sub> is an integer from 0 to 20,

R<sup>5</sup>, R<sup>5'</sup>, R<sup>6</sup> and R<sup>6'</sup> are independently selected from the group consisting of: H, CH<sub>3</sub>, OH, NH<sub>2</sub>, NHCOCH<sub>3</sub>, COOH, CH<sub>2</sub>SH and C(CH<sub>3</sub>)<sub>2</sub>SH;

25

when the bond between the C<sup>A</sup> and C<sup>B</sup> carbons is a double bond R<sup>5</sup> and R<sup>6</sup> or R<sup>6'</sup> and R<sup>5'</sup> are absent.

46. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 45 wherein

30

n<sub>1</sub> is an integer from 1 to 10,



n6 and n7 are 1;

X<sub>1</sub> is -WC(O)- wherein W is sulfur;

R<sup>5</sup>, R<sup>5'</sup> and R<sup>6'</sup> are H,

R<sup>6</sup> is NHCOCH<sub>3</sub>;

5 with the proviso that the -ONO<sub>2</sub> group is bound to the -(CH<sub>2</sub>)<sub>n1</sub>- group.

47. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 36 wherein s is 1, Z is H and Z<sub>1</sub> are -C(O)-.

10 48. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 47 wherein

Y is a straight or branched C<sub>1</sub>-C<sub>20</sub> alkylene being optionally substituted with one or more of the substituents selected from the group consisting of halogen atoms, hydroxy, -ONO<sub>2</sub> or T, wherein T is -OC(O)(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>, -O(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>.

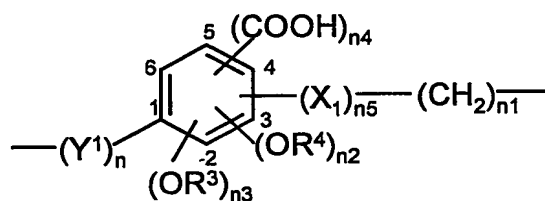
15

49. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 48 wherein Y is a straight or branched C<sub>1</sub>-C<sub>10</sub> alkylene.

50. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 47 wherein

20

Y is



(IV)

wherein

25 n is an integer from 0 to 20,

n<sub>1</sub> is an integer from 1 to 20;

n<sub>2</sub>, n<sub>3</sub>, n<sub>4</sub> and n<sub>5</sub> are integers equal or different from each other, equal to 0 or 1;

R<sup>3</sup> and R<sup>4</sup> are independently selected from H or CH<sub>3</sub>;

Y<sup>1</sup> is -CH<sub>2</sub>- or -(CH<sub>2</sub>)<sub>na</sub>-CH=CH- wherein na is an integer from 0 to 20;

30 X<sub>1</sub> is -WC(O)- or -C(O)W-, wherein W is oxygen, sulfur or NH.

51. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 50 wherein

$n_2, n_3, n_4, n_5$  are equal to 0,

$n_1$  is 1,

5  $n$  is an integer from 0 to 10,

$Y^1$  is  $CH_2$ .

52. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 50 wherein

10  $n, n_2, n_5$  are 1,  $n_3$  and  $n_4$  are equal to 0,

$n_1$  is an integer from 1 to 10,

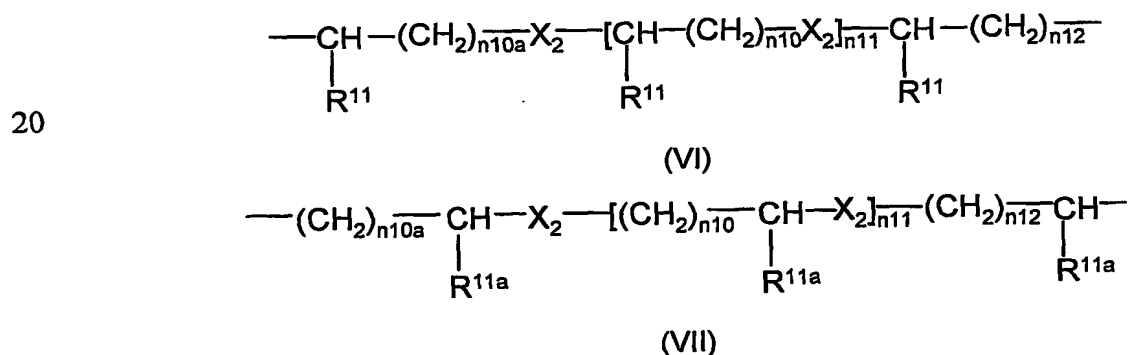
$Y^1$  is  $-(CH_2)_{n_a}-CH=CH-$  wherein  $n_a$  is 0,

$X_1$  is  $-WC(O)-$  wherein  $W$  is oxygen and  $X_1$  is bound to the phenyl ring through the  $[C]_4$ ,

15  $R^4$  is  $CH_3$  and the group  $(OR^4)$  is bound to the phenyl ring through the  $[C]_3$ .

53. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 47 wherein

$Y$  is



wherein

25  $X_2$  is O or S,

$n_{10a}, n_{10}$  and  $n_{12}$  are integers independently selected from 0 to 20;

$n_{11}$  is an integer from 0 to 6;

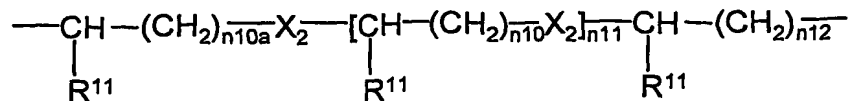
$R^{11}$  is H,  $CH_3$  or a nitrooxy group;

$R^{11a}$  is  $CH_3$  or a nitrooxy group.

30

54. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 53 wherein

Y is



(VI)

wherein

X<sub>2</sub> is O or S,

n<sub>10a</sub> and n<sub>11</sub> are 0,

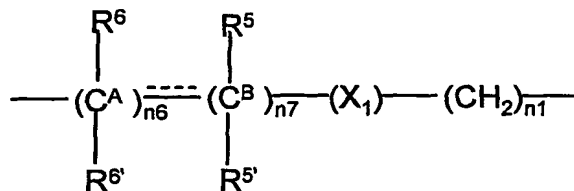
n<sub>12</sub> is 1,

R<sup>11</sup> is H;

wherein the -ONO<sub>2</sub> group is bound to the -(CH<sub>2</sub>)<sub>n12</sub>- group.

55. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 47 wherein

Y is



(V)

wherein:

n<sub>1</sub> is an integer from 1 to 20;

X<sub>1</sub> is -WC(O)- or a -C(O)W-, wherein W is oxygen, sulfur or NH.

n<sub>6</sub> is an integer from 1 to 20,

n<sub>7</sub> is an integer from 0 to 20,

R<sup>5</sup> and R<sup>5'</sup> R<sup>6</sup> and R<sup>6'</sup> are independently selected from the group consisting of: H, CH<sub>3</sub>, OH, NH<sub>2</sub>, NHCOCH<sub>3</sub>, COOH, CH<sub>2</sub>SH and C(CH<sub>3</sub>)<sub>2</sub>SH;

when the bond between the C<sup>A</sup> and C<sup>B</sup> carbons is a double bond R<sup>5</sup> and R<sup>6</sup> or R<sup>6'</sup> and R<sup>5'</sup> are absent.

56. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 55 wherein

n<sub>1</sub> is an integer from 1 to 10,

n<sub>6</sub> and n<sub>7</sub> are 1;

X<sub>1</sub> is -WC(O)- wherein W is sulfur;

R<sup>5</sup>, R<sup>5'</sup> and R<sup>6'</sup> are H,

$R^6$  is  $\text{NHCOCH}_3$ ;

with the proviso that the  $-\text{ONO}_2$  group is bound to the  $-(\text{CH}_2)_{n1}-$ .

57. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 36 wherein  $s$  is 1,  $Z_1$  is H and  $Z -\text{C}(\text{O})-$ .

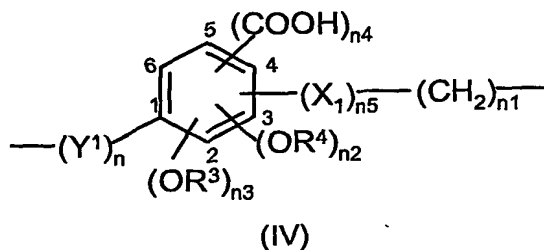
58. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 57 wherein

$Y$  is a straight or branched  $\text{C}_1$ - $\text{C}_{20}$  alkylene being optionally substituted with one or more of the substituents selected from the group consisting of halogen atoms, hydroxy,  $-\text{ONO}_2$  or  $T$ , wherein  $T$  is  $-\text{OC}(\text{O})(\text{C}_1\text{-C}_{10}\text{alkyl})-\text{ONO}_2$ ,  $-\text{O}(\text{C}_1\text{-C}_{10}\text{alkyl})-\text{ONO}_2$ .

59. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 58 wherein  $Y$  is a straight or branched  $\text{C}_3$ - $\text{C}_6$  alkylene.

60. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 57 wherein

$Y$  is



wherein

$n$  is an integer from 0 to 20,

$n1$  is an integer from 1 to 20;

$n2$ ,  $n3$ ,  $n4$  and  $n5$  are integers equal or different from each other, equal to 0 or 1;

$R^3$  and  $R^4$  are independently selected from H or  $\text{CH}_3$ ;

$Y^1$  is  $-\text{CH}_2-$  or  $-(\text{CH}_2)_{na}-\text{CH}=\text{CH}-$  wherein  $na$  is an integer from 0 to 20;

$X_1$  is  $-\text{WC}(\text{O})-$  or  $-\text{C}(\text{O})\text{W}-$ , wherein  $W$  is oxygen, sulfur or NH.

61. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 60 wherein

$n2$ ,  $n3$ ,  $n4$ ,  $n5$  are equal to 0,

$n1$  is 1,

n is an integer from 0 to 10,

Y<sup>1</sup> is CH<sub>2</sub>.

62. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable

5 salts thereof according to claim 60 wherein

n, n<sub>2</sub>, n<sub>5</sub> are 1, n<sub>3</sub> and n<sub>4</sub> are equal to 0,

n<sub>1</sub> is an integer from 1 to 10,

Y<sup>1</sup> is -(CH<sub>2</sub>)<sub>na</sub>-CH=CH- wherein na is 0,

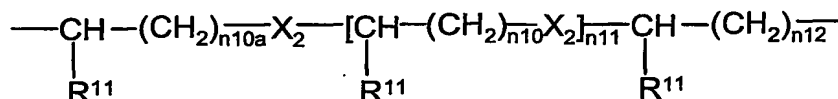
10 X<sub>1</sub> is -WC(O)- wherein W is oxygen and X<sub>1</sub> is bound to the phenyl ring through the [C]<sub>4</sub>,

R<sup>4</sup> is CH<sub>3</sub> and the group (OR<sup>4</sup>) is bound to the phenyl ring through the [C]<sub>3</sub>.

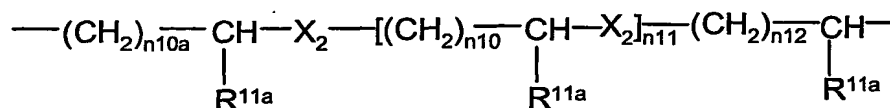
63. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable

salts thereof according to claim 57 wherein

15 Y is



(VI)



(VII)

20 wherein

X<sub>2</sub> is O or S,

n<sub>10a</sub>, n<sub>10</sub> and n<sub>12</sub> are integers independently selected from 0 to 20;

n<sub>11</sub> is an integer from 0 to 6;

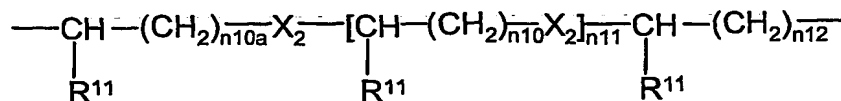
R<sup>11</sup> is H, CH<sub>3</sub> or a nitrooxy group;

25 R<sup>11a</sup> is CH<sub>3</sub> or a nitrooxy group.

64. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable

salts thereof according to claim 63 wherein

Y is



30

(VI)

wherein

$X_2$  is O or S,

$n_{10a}$  and  $n_{11}$  are 0,

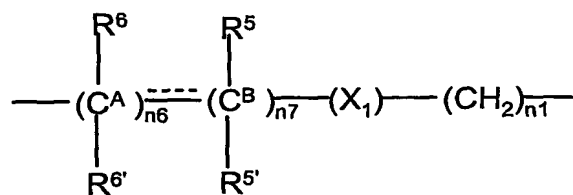
5  $n_{12}$  is 1,

$R^{11}$  is H;

wherein the  $-\text{ONO}_2$  group is bound to the  $-(\text{CH}_2)_{n_{12}}-$  group.

65. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable  
10 salts thereof according to claim 57 wherein

Y is



(V)

wherein:

15  $n_1$  is an integer from 1 to 20;

$X_1$  is  $-\text{WC}(\text{O})-$  or a  $-\text{C}(\text{O})\text{W}-$ , wherein W is oxygen, sulfur or NH.

$n_6$  is an integer from 1 to 20,

$n_7$  is an integer from 0 to 20,

20  $R^5$  and  $R^{5'}$ ,  $R^6$  and  $R^{6'}$  are independently selected from the group consisting of: H,  $\text{CH}_3$ ,  
OH,  $\text{NH}_2$ ,  $\text{NHCOCH}_3$ ,  $\text{COOH}$ ,  $\text{CH}_2\text{SH}$  and  $\text{C}(\text{CH}_3)_2\text{SH}$ ;

when the bond between the  $\text{C}^{\text{A}}$  and  $\text{C}^{\text{B}}$  carbons is a double bond  $R^5$  and  $R^6$  or  $R^{6'}$  and  $R^{5'}$  are absent.

66. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable  
25 salts thereof according to claim 65 wherein

$n_1$  is an integer from 1 to 10,

$n_6$  and  $n_7$  are 1;

$X_1$  is  $-\text{WC}(\text{O})-$  wherein W is sulfur;

$R^5$ ,  $R^{5'}$  and  $R^{6'}$  are H,

30  $R^6$  is  $\text{NHCOCH}_3$ ;

with the proviso that the  $-\text{ONO}_2$  group is bound to the  $-(\text{CH}_2)_{n_1}-$ .

67. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 36 wherein s is 1, Z<sub>1</sub> is H and Z -C(O)O-.

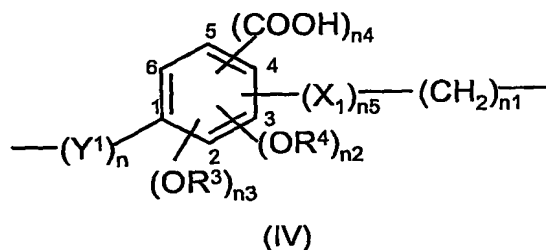
68. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 67 wherein

Y is a straight or branched C<sub>1</sub>-C<sub>20</sub> alkylene being optionally substituted with one or more of the substituents selected from the group consisting of halogen atoms, hydroxy, -ONO<sub>2</sub> or T, wherein T is -OC(O)(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>, -O(C<sub>1</sub>-C<sub>10</sub>alkyl)-ONO<sub>2</sub>.

69. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 68 wherein Y is a straight or branched C<sub>3</sub>-C<sub>6</sub> alkylene.

70. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 67 wherein

Y is



wherein

n is an integer from 0 to 20,

n<sub>1</sub> is an integer from 1 to 20;

n<sub>2</sub>, n<sub>3</sub>, n<sub>4</sub> and n<sub>5</sub> are integers equal or different from each other, equal to 0 or 1;

R<sup>3</sup> and R<sup>4</sup> are independently selected from H or CH<sub>3</sub>;

Y<sup>1</sup> is -CH<sub>2</sub>- or -(CH<sub>2</sub>)<sub>na</sub>-CH=CH- wherein na is an integer from 0 to 20;

X<sub>1</sub> is -WC(O)- or -C(O)W-, wherein W is oxygen, sulfur or NH.

71. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 70 wherein

n<sub>2</sub>, n<sub>3</sub>, n<sub>4</sub>, n<sub>5</sub> are equal to 0,

n<sub>1</sub> is 1,

n is an integer from 0 to 10,

Y<sup>1</sup> is CH<sub>2</sub>.

72. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 70 wherein

$n$ ,  $n_2$ ,  $n_5$  are 1,  $n_3$  and  $n_4$  are equal to 0,

$n_1$  is an integer from 1 to 10,

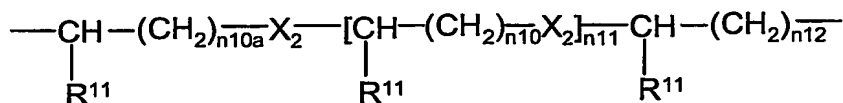
5  $Y^1$  is  $-(CH_2)_{n_a}-CH=CH-$  wherein  $n_a$  is 0,

$X_1$  is  $-WC(O)-$  wherein  $W$  is oxygen and  $X_1$  is bound to the phenyl ring through the  $[C]_4$ ,

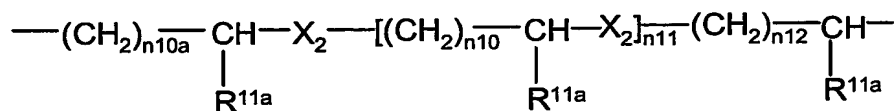
$R^4$  is  $CH_3$  and the group  $(OR^4)$  is bound to the phenyl ring through the  $[C]_3$ .

10 73. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 67 wherein

$Y$  is



(VI)



(VII)

wherein

$X_2$  is O or S,

$n_{10a}$ ,  $n_{10}$  and  $n_{12}$  are integers independently selected from 0 to 20;

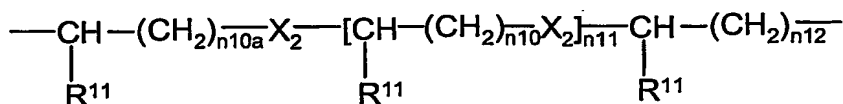
20  $n_{11}$  is an integer from 0 to 6;

$R^{11}$  is H,  $CH_3$  or a nitrooxy group;

$R^{11a}$  is  $CH_3$  or a nitrooxy group.

74. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 73 wherein

$Y$  is



(VI)

wherein

30  $X_2$  is O or S,



n10a is 0 or 1,

n11 is 0 or 1,

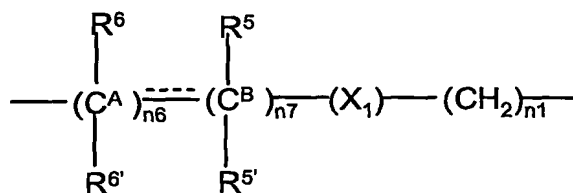
n12 is 1 or 2,

R<sup>11</sup> is H;

5 wherein the -ONO<sub>2</sub> group is bound to the -(CH<sub>2</sub>)<sub>n12</sub>- group.

75. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 67 wherein

Y is



10

(V)

wherein:

n1 is an integer from 1 to 20;

X<sub>1</sub> is -WC(O)- or a -C(O)W-, wherein W is oxygen, sulfur or NH.

15

n6 is an integer from 1 to 20,

n7 is an integer from 0 to 20,

R<sup>5</sup> and R<sup>5'</sup>, R<sup>6</sup> and R<sup>6'</sup> are independently selected from the group consisting of: H, CH<sub>3</sub>, OH, NH<sub>2</sub>, NHCOCH<sub>3</sub>, COOH, CH<sub>2</sub>SH and C(CH<sub>3</sub>)<sub>2</sub>SH;

when the bond between the C<sup>A</sup> and C<sup>B</sup> carbons is a double bond R<sup>5</sup> and R<sup>6</sup> or R<sup>6'</sup> and R<sup>5'</sup> are absent.

20

76. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 75 wherein

n1 is an integer from 1 to 10,

25

n6 and n7 are 1;

X<sub>1</sub> is -WC(O)- wherein W is sulfur;

R<sup>5</sup>, R<sup>5'</sup> and R<sup>6'</sup> are H,

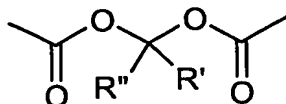
R<sup>6</sup> is NHCOCH<sub>3</sub>;

with the proviso that the -ONO<sub>2</sub> group is bound to the -(CH<sub>2</sub>)<sub>n1</sub>-.

30

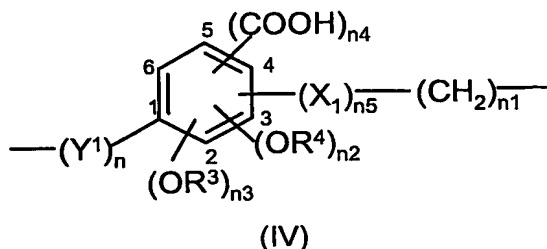
77. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claims 36 wherein s is 1, Z<sub>1</sub> is H and Z is

85



78. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 77 wherein

5 Y is



wherein

n is an integer from 0 to 20,

10 n1 is an integer from 1 to 20;

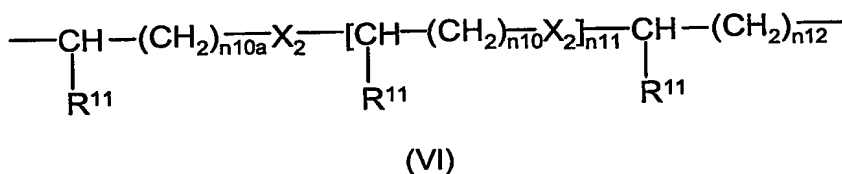
n2, n3, n4 and n5 are equal to 0;

Y<sup>1</sup> is -CH<sub>2</sub>-;

79. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 78 wherein n is 0 and n1 is 1.

80. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to claim 77 wherein

Y is



wherein

X<sub>2</sub> is O or S,

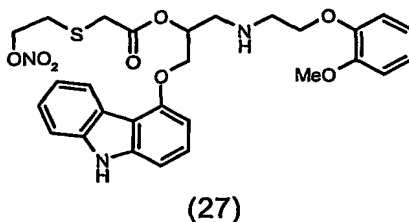
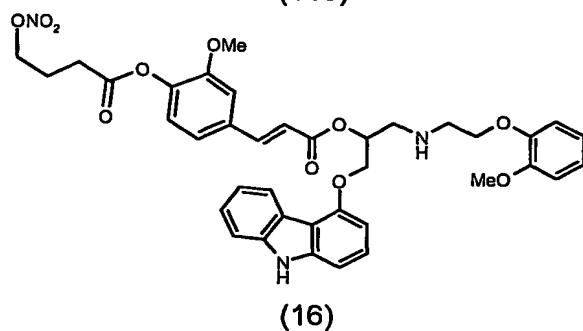
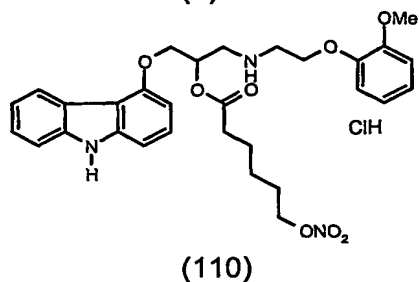
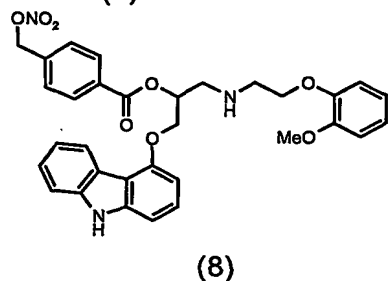
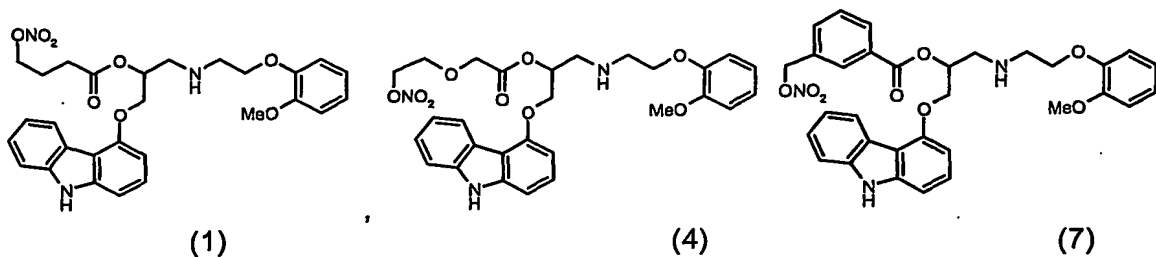
n10a and n11 are 0,

25 n12 is 1,

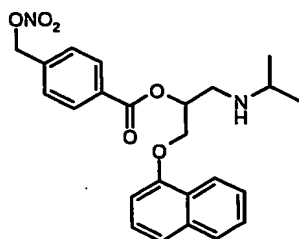
R<sup>11</sup> is H;

wherein the -ONO<sub>2</sub> group is bound to the-(CH<sub>2</sub>)<sub>n12</sub>- group.

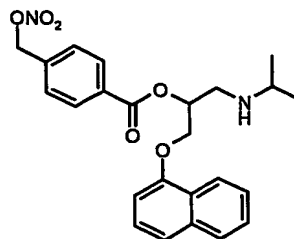
81. Compounds and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to any of claims 36 and 57 to 67 wherein the compounds are:



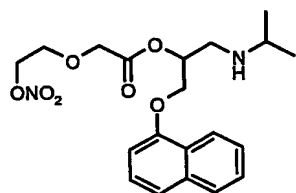
82. Compounds and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to any of claims 12 to 17 wherein the compounds are:



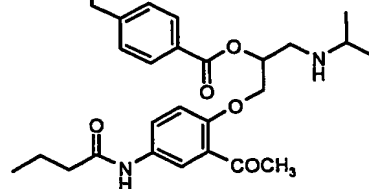
(30)



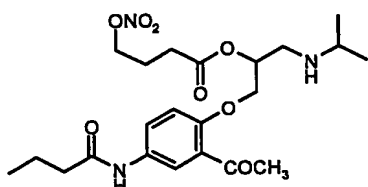
(31)



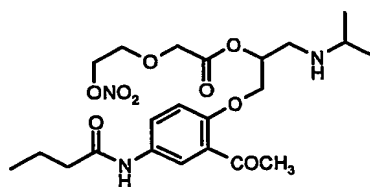
(36)



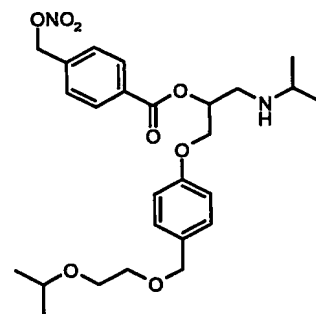
(39)



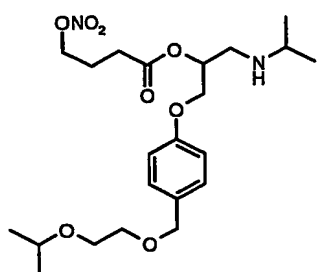
(40)



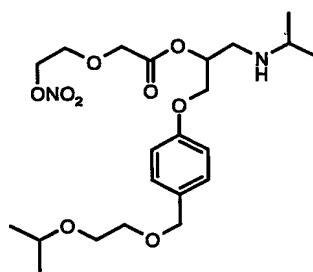
(45)



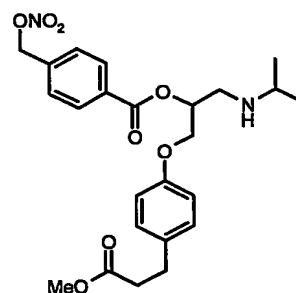
(48)



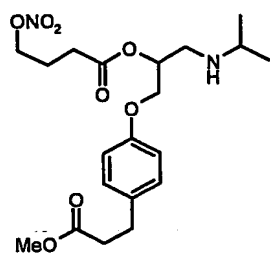
(49)



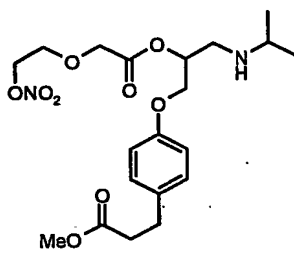
(49)



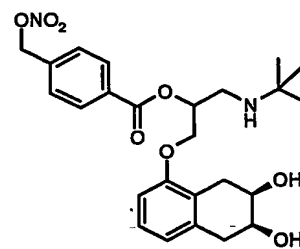
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(58)

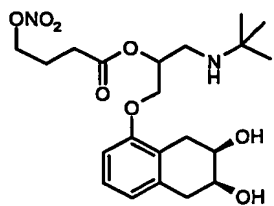


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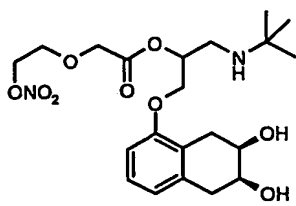


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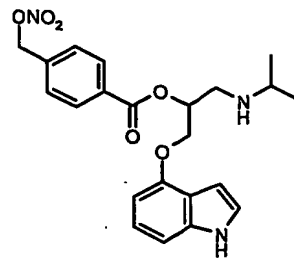
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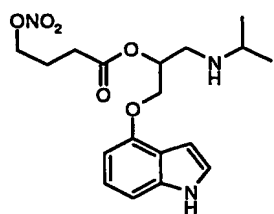
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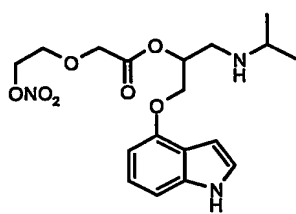
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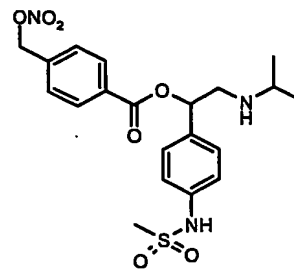
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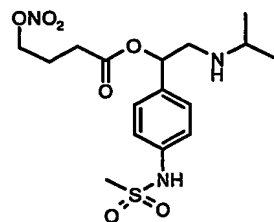
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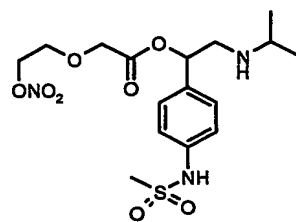
(81)



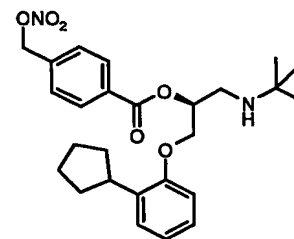
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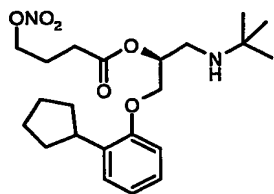
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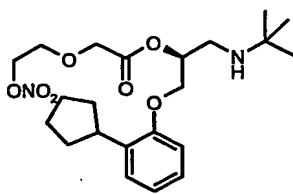
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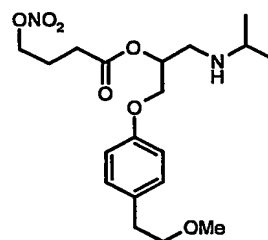
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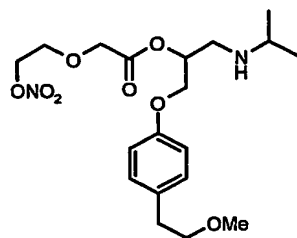
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(98)

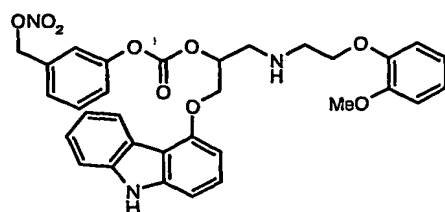


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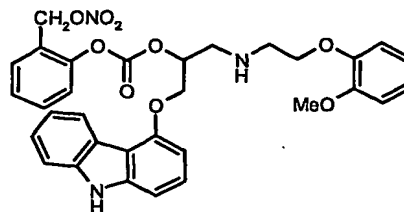


(106)

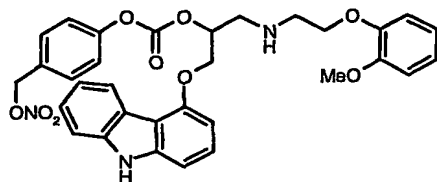
83. Compounds and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to any of claims 36 and 67 to 76 wherein the compounds are:



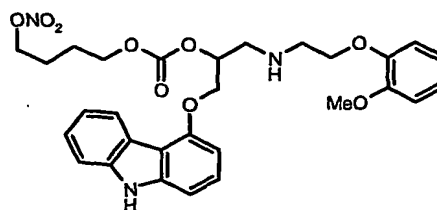
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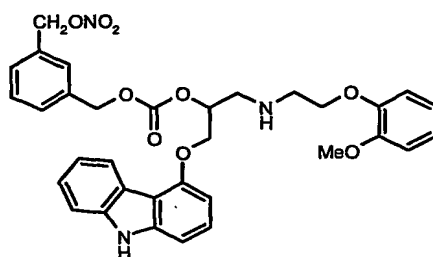
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(23)

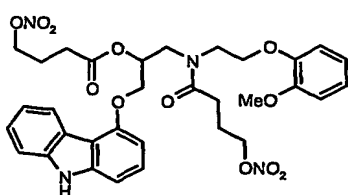


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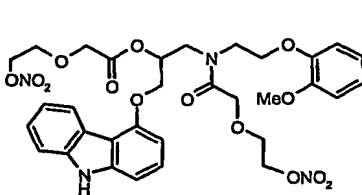


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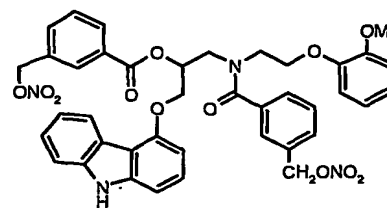
84. Compounds and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to any of claims 36 to 46 wherein the compounds are:



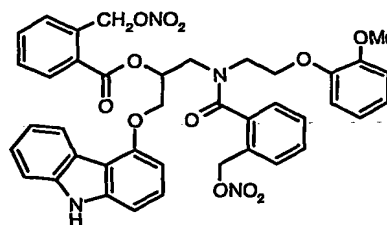
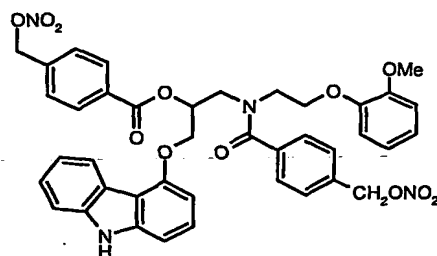
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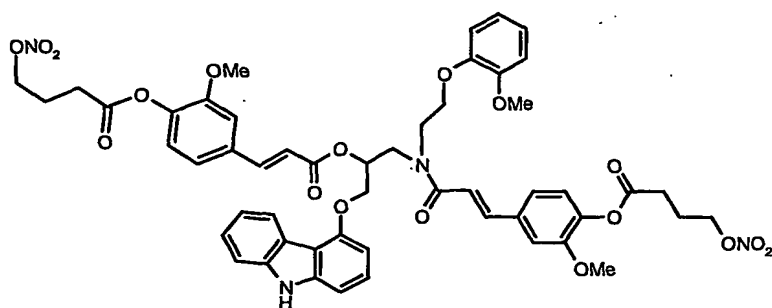
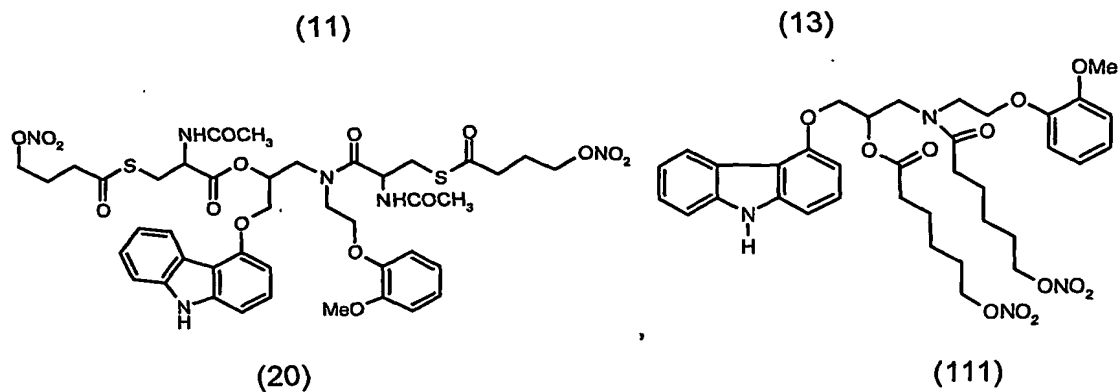


(5)

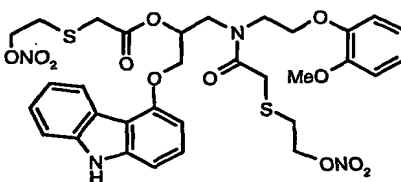


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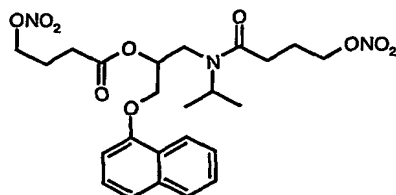


(26)



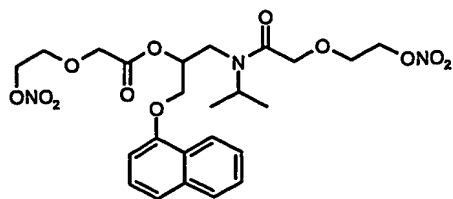
(28)

85. Compounds and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to any of claims 2 to 11 wherein the compounds are:

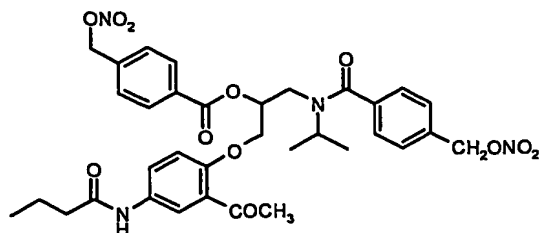


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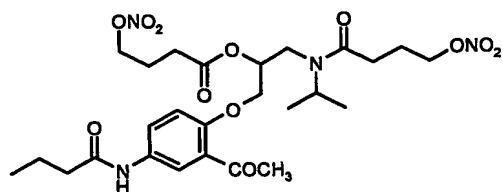
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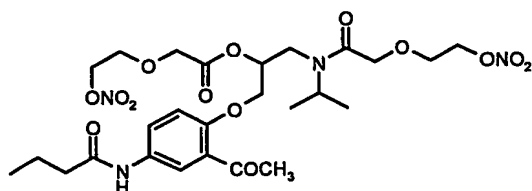
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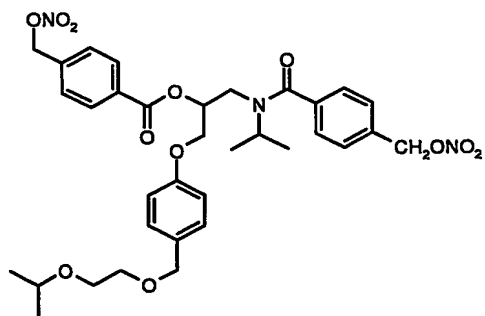
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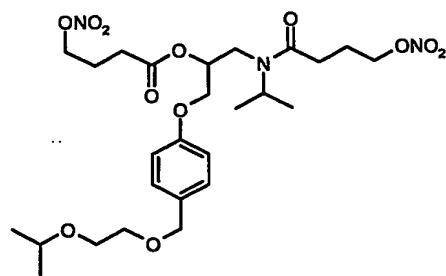
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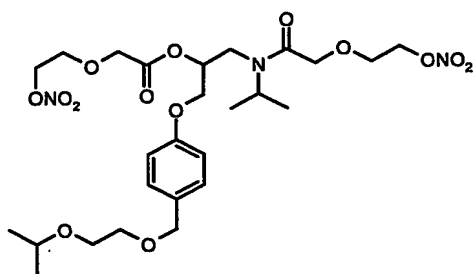
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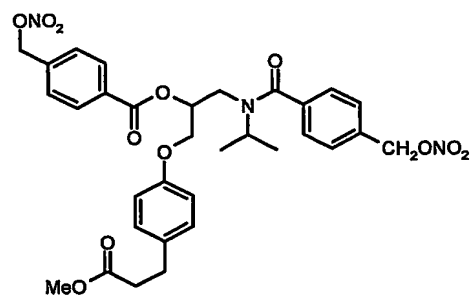
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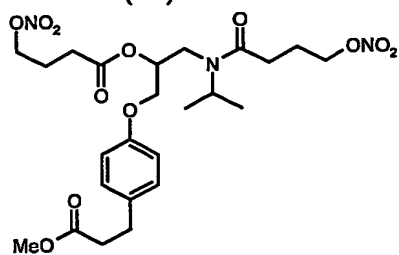
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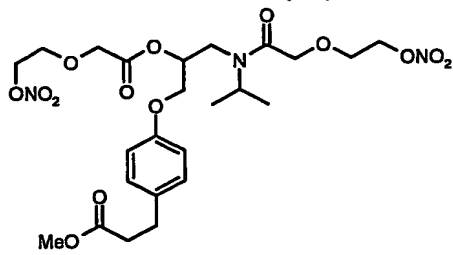
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(59)



(60)

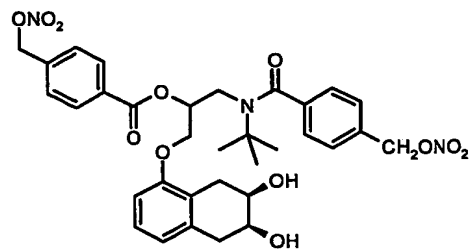


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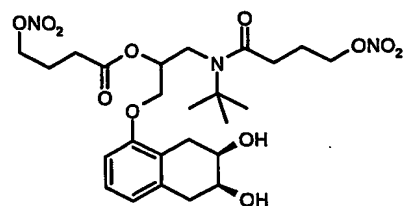
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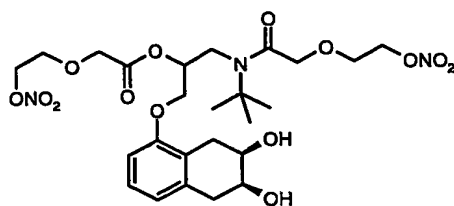




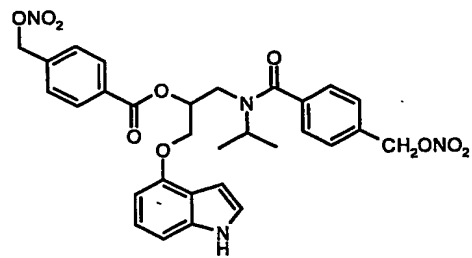
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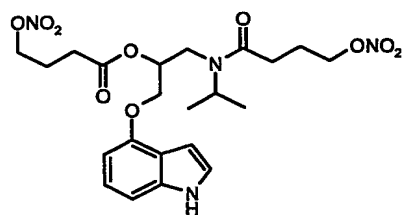
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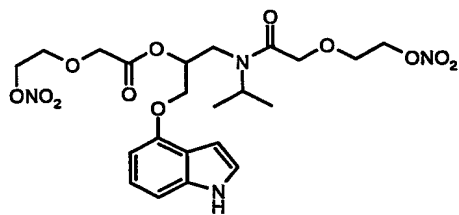
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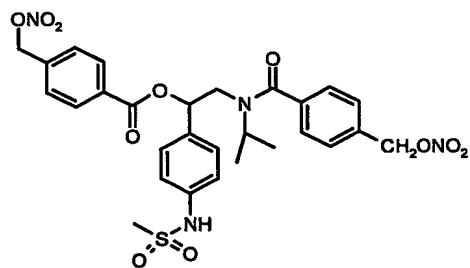
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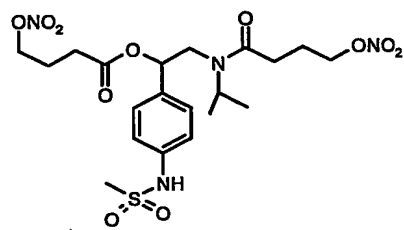
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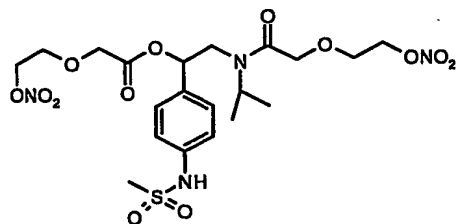
(82)



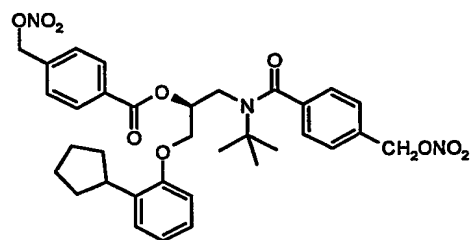
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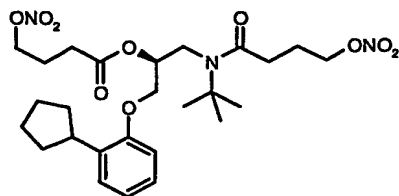
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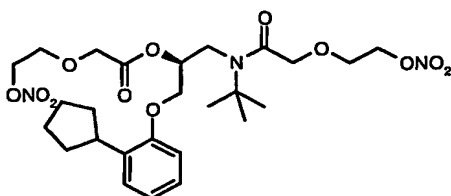
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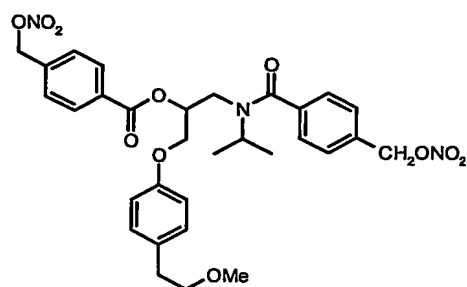
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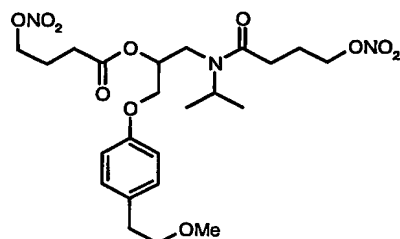
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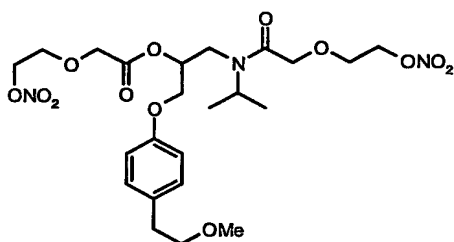
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(103)

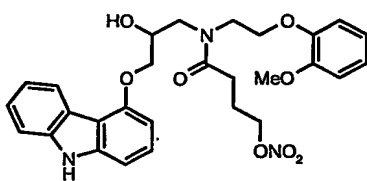


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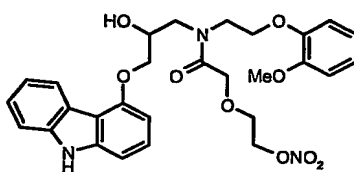


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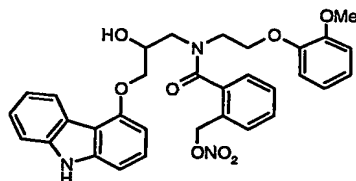
86. Compounds and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to any of claims 36 and 47 to 55 wherein the compounds are:



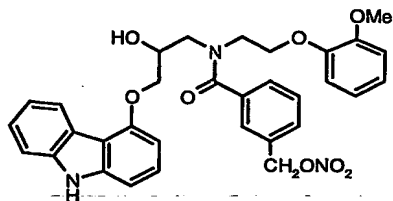
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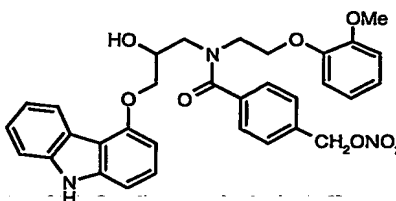
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(12)

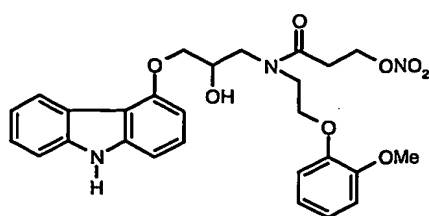


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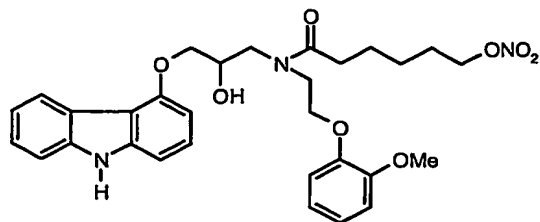


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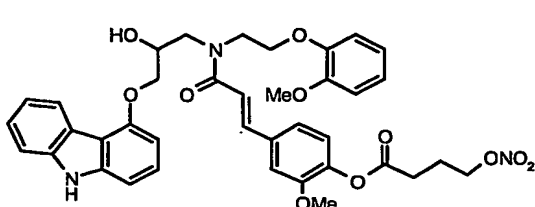
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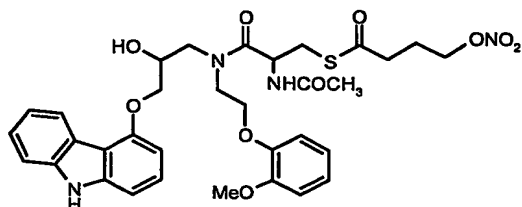
(112)



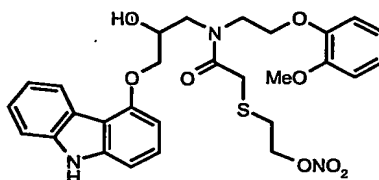
(113)



(17)



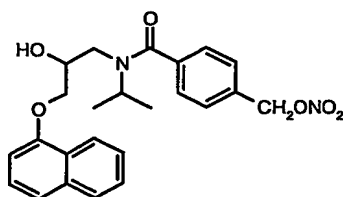
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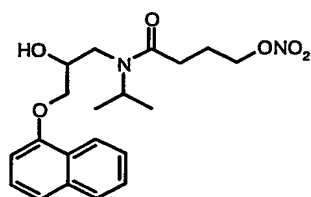
(29)

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87. Compounds and the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof according to any of claims 26 to 35 wherein the compounds are:

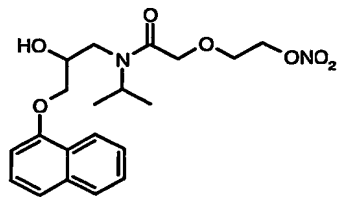


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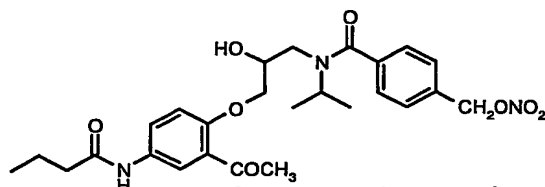


(35)

10

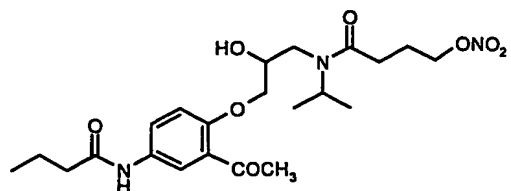


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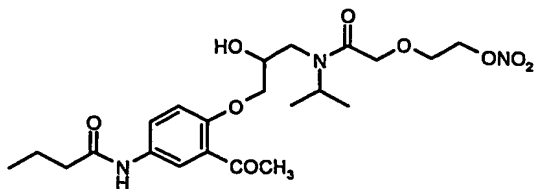


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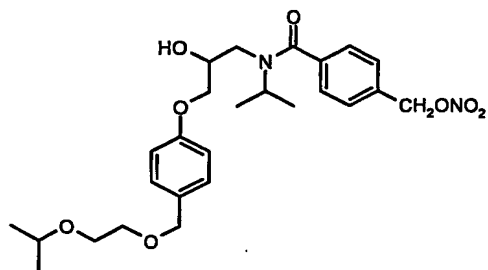
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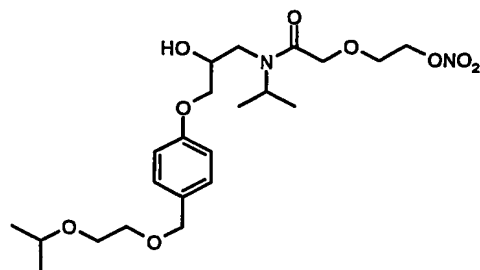
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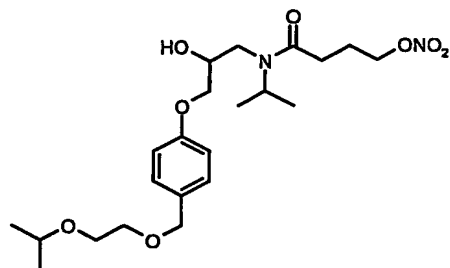
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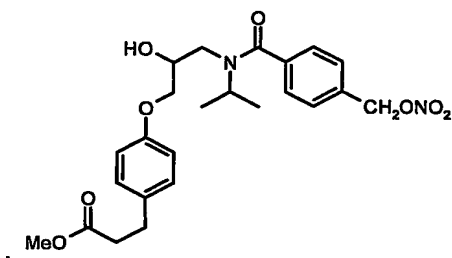
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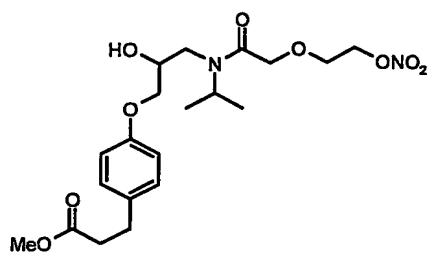
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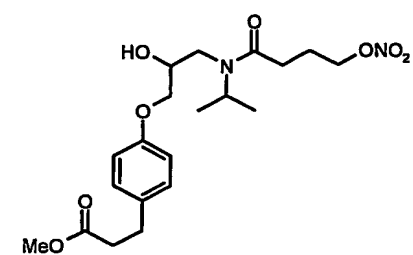
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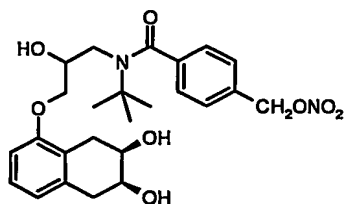
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(64)

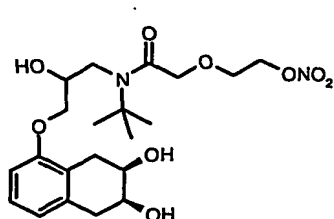


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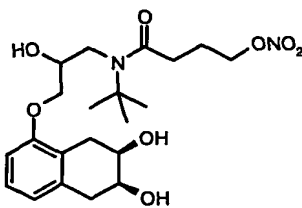


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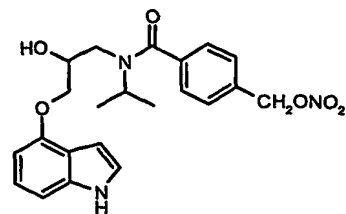
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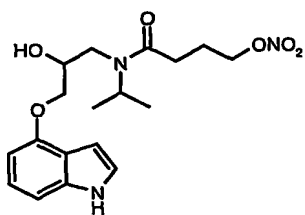
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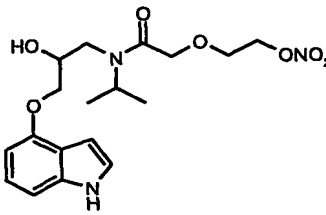
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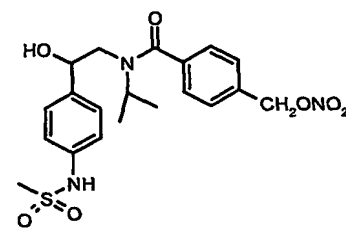
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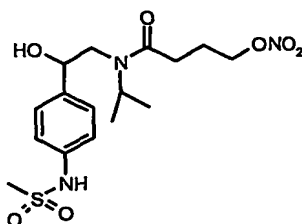
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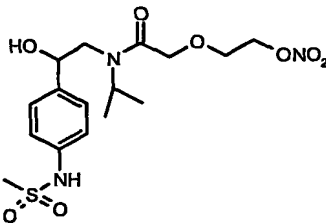
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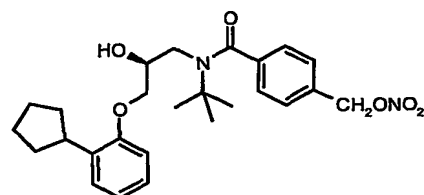
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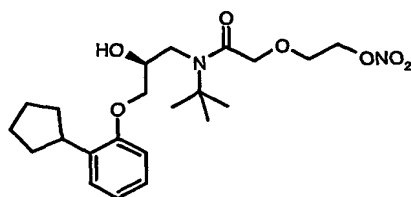
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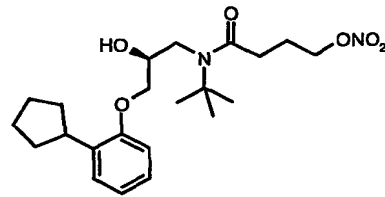
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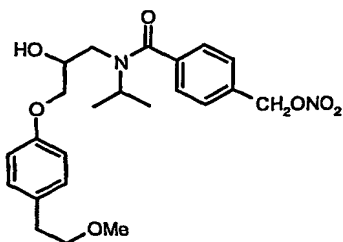
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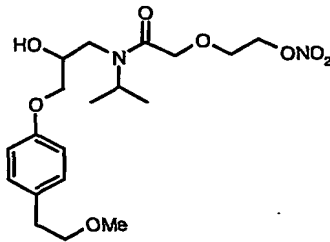
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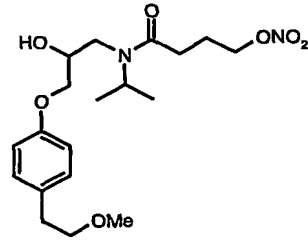
(101)



(105)



(108)



(109)

88. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts according to claims 36 and 47, that is 4-(Nitrooxymethyl)benzoic acid 1-(9H-carbazol-4-yloxy)-3-[[2-(2-methoxyphenoxy) ethyl]amino]-2-propanoate.

89. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts according to claims 36 and 57, that is 4-(Nitrooxymethyl)benzoic acid 1-(9H-carbazol-4-yloxy)-3-[[2-(2-methoxyphenoxy)ethyl][(4-nitrooxymethyl)benzoyl]amino]-2-propanoate.
- 5 90. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts according to claims 36 and 47, that is 1-(9H-carbazol-4-yloxy)-3-[[2-(2-methoxyphenoxy)ethyl][(4-nitrooxymethyl)benzoyl] amino]-2-propanol.
- 10 91. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts according to claims 36 and 47, that is 6-(nitrooxy)hexanoic acid 1-(9H-carbazol-4-yloxy)-3-[[2-(2-methoxyphenoxy) ethyl]amino]-2-propanol hydrochloride.
- 15 92. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts according to claims 36 and 47, that is 6-(nitrooxy)hexanoic acid 1-(9H-carbazol-4-yloxy)-3-[[2-(2-methoxyphenoxy) ethyl]-[(6-nitrooxyhexanoyl] amino]-2-propanol.
- 20 93. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts according to claims 36 and 47, that is 1-(9H-carbazol-4-yloxy)-3-[[2-(2-methoxyphenoxy)ethyl][(6-nitrooxyhexanoyl)amino]-2-propanol.
- 25 94. A compound and the enantiomers, diastereoisomers and pharmaceutically acceptable salts according to claims 36 and 47, that is 1-(9H-carbazol-4-yloxy)-3-[[2-(2-methoxyphenoxy)ethyl][(3-nitrooxypropanoyl)amino]-2-propanol.
- 30 95. A compound of formula (I) and/or the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof as defined in any of claims 1 to 94 for use as medicament.
- 35 96. Use of a compound of formula (I) and/or the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof as defined in any of claims 1 to 94 for preparing a drug that can be employed in the treatment or prophylaxis of hypertension, cardiovascular and vascular diseases.
97. Use of a compound of formula (I) and/or the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof as defined in any of claims 1 to 94 for

preparing a drug that can be employed in the treatment of glaucoma and elevated intraocular pressure.

- 5 98. A pharmaceutical composition comprising a compound of formula (I) and/or the enantiomers, diastereoisomers and pharmaceutically acceptable salts thereof as defined in any of claims 1 to 94 and at least pharmaceutical acceptable carrier.